

EXPERIENTIAL AND COGNITIVE SMALL GROUP APPROACHES
TO ALCOHOL EDUCATION FOR COLLEGE STUDENTS

BY

GEORGE R. ROZELLE

A DISSERTATION PRESENTED TO THE GRADUATE COUNCIL OF
THE UNIVERSITY OF FLORIDA
IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF
DOCTOR OF PHILOSOPHY

UNIVERSITY OF FLORIDA

1978

ACKNOWLEDGMENTS

The author wishes to acknowledge the contributions of several people without whom the completion of the study would not have been possible. The author expresses his sincerest gratitude and appreciation to Dr. Harold Riker, Chairman and advisor, who provided valuable guidance and support to the author throughout his doctoral program and who carefully edited the manuscript; Dr. Tom Goodale, advisor and supervisor, whose personal concern and involvement became a source of encouragement and inspiration; Dr. Carol Van Hartesveldt, teacher and committee member for her expertise and commitment to quality performance; and Dr. Gerardo Gonzalez, friend and colleague, who provided the encouragement, technical assistance, and working environment which facilitated the completion of the study.

The author extends a very special note of thanks to Mr. and Mrs. George M. Rozelle, the author's parents, whose love and support have been, and will continue to be, a source of inspiration, guidance, and strength; and to Mary Shannon, devoted wife, for her love, patience, understanding, and encouragement.

A special expression of appreciation is in order for Kenni Pratt and Vickie Townsend for their tireless assistance, and to all the peer facilitators for their participation in the research effort.

TABLE OF CONTENTS

	Page
ACKNOWLEDGMENTS	ii
LIST OF TABLES	vi
ABSTRACT	xi
 CHAPTER	
I. INTRODUCTION	1
Need for the Study	4
Purpose of the Study	5
Rationale for the Study	5
Overview of the Study	10
Research Questions	10
Definition of Terms	11
Organization of the Remainder of the Study	12
 II. REVIEW OF RELATED LITERATURE	13
American Drinking Practices	13
Drinking Behaviors of College Students	18
Minimizing Alcohol Problems	24
Alcohol Education	27
Historical Perspective	27
Current Status	29
Goals and Objectives	31
Evaluation of Effectiveness	32
Responsible Behavior Toward Alcohol	36
Attitude Change	39
The Use of Peers	43
The Use of Small Group Discussion	44
An Experiential Approach	45
Summary and Implications for the Study	49
 III. METHODOLOGY	51
The Research Hypothesis	51
The Research Design	53
Subjects	54
Sampling Method	56
The Course	56

	Page
Procedure	57
Experiential Group	59
Cognitive Group	62
Criterion Instruments	63
Attitudes About Drinking Questionnaire	63
The Student Drinking Questionnaire	65
Data Collection	68
Analysis of the Data	70
Limitations of the Study	70
IV. RESULTS	72
V. CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS	118
Summary	118
Discussion	122
Conclusions	126
Implications	127
Recommendations for Future Research	132
REFERENCE NOTES	135
REFERENCES	136
APPENDIX	
A. ASC 210 COURSE SYLLABUS	144
B. PEER FACILITATOR TRAINING WORKSHOP	146
C. INFORMED CONSENT FORM	148
D. COURSE OUTLINE FOR ACTIVITY GROUPS	149
E. ROLE PLAY VIGNETTES: RESPONSIBLE BEHAVIOR TOWARD ALCOHOL	150
F. SITE VISITS TO LOCAL DRINKING ESTABLISHMENTS	151
G. RESPONSIBLE DRINKING PARTY	156
H. ROLE PLAY VIGNETTES: DEALING WITH ALCOHOL PROBLEMS	158
I. COURSE OUTLINE FOR DISCUSSION GROUPS	159

	Page
J. VALUES CLARIFICATION EXERCISES	160
K. ATTITUDES ABOUT DRINKING	161
L. STUDENT DRINKING QUESTIONNAIRE	166
M. COVER LETTER FOR POST-POSTTEST	170
N. SECOND COVER LETTER FOR POST-POSTTEST	171
BIOGRAPHICAL SKETCH	172

LIST OF TABLES

Table	Page
1. Analysis of Covariance of Posttest Scores Adjusted for Pretest Scores of Responsible-Irresponsible Attitudes Among Experiential, Cognitive, and Control Groups with Tukey's HSD Comparisons Among Means	74
2. Analysis of Covariance of Post-Posttest Scores Adjusted for Pretest Scores of Responsible-Irresponsible Attitudes Among Experiential, Cognitive, and Control Groups with Tukey's HSD Comparisons Among Means	75
3. Analysis of Covariance of Posttest Scores Adjusted for Pretest Scores of Temperance-Intemperance Attitudes Among Experiential, Cognitive, and Control Groups	76
4. Analysis of Covariance of Post-Posttest Scores Adjusted for Pretest Scores of Temperance-Intemperance Attitudes Among Experiential, Cognitive, and Control Groups	77
5. Analysis of Covariance of Posttest Scores Adjusted for Pretest Scores of Knowledge About Alcohol Among Experiential, Cognitive, and Control Groups with Tukey's HSD Comparisons Among Means	78
6. Analysis of Covariance of Post-Posttest Scores Adjusted for Pretest Scores of Knowledge About Alcohol Among Experiential, Cognitive, and Control Groups with Tukey's HSD Comparisons Among Means	79
7. Analysis of Covariance of Posttest Scores, Adjusted for Pretest Scores of Incidences of Negative Consequences Among Experiential, Cognitive, and Control Groups	80
8. Analysis of Covariance of Post-Posttest Scores Adjusted for Pretest Scores of Incidences of Negative Consequences Among Experiential, Cognitive, and Control Groups with Tukey's HSD Comparisons Among Means	81
9. Analysis of Covariance of Posttest Scores Adjusted for Pretest Scores of Males' Responsible-Irresponsible Attitudes Among Experiential, Cognitive, and Control Groups with Tukey's HSD Comparisons Among Means	82

Table	Page
10. Analysis of Covariance of Posttest Scores Adjusted for Pretest Scores of Females' Responsible-Irresponsible Attitudes Among Experiential, Cognitive, and Control Groups with Tukey's HSD Comparisons Among Means	83
11. Analysis of Covariance of Post-Posttest Scores Adjusted for Pretest Scores of Males' Responsible-Irresponsible Attitudes Among Experiential, Cognitive, and Control Groups with Tukey's HSD Comparisons Among Means	84
12. Analysis of Covariance of Post-Posttest Scores Adjusted for Pretest Scores of Females' Responsible-Irresponsible Attitudes Among Experiential, Cognitive, and Control Groups with Tukey's HSD Comparisons Among Means	85
13. Analysis of Covariance of Posttest Scores Adjusted for Pretest Scores of Males' Temperance-Intemperance Attitudes Among Experiential, Cognitive, and Control Groups	86
14. Analysis of Covariance of Posttest Scores Adjusted for Pretest Scores of Females' Temperance-Intemperance Attitudes Among Experiential, Cognitive, and Control Groups with Tukey's HSD Comparisons Among Means	87
15. Analysis of Covariance of Post-Posttest Scores of Males' Temperance-Intemperance Attitudes Among Experiential, Cognitive, and Control Groups	88
16. Analysis of Covariance of Post-Posttest Scores Adjusted for Pretest Scores of Females' Temperance-Intemperance Attitudes Among Experiential, Cognitive, and Control Groups	88
17. Analysis of Covariance of Posttest Scores Adjusted for Pretest Scores of Males' Knowledge About Alcohol Among Experiential, Cognitive, and Control Groups with Tukey's HSD Comparisons Among Means	89
18. Analysis of Covariance of Posttest Scores Adjusted for Pretest Scores of Females' Knowledge About Alcohol Among Experiential, Cognitive, and Control Groups with Tukey's HSD Comparisons Among Means	90
19. Analysis of Covariance of Post-Posttest Scores Adjusted for Pretest Scores of Males' Knowledge About Alcohol Among Experiential, Cognitive, and Control Groups with Tukey's HSD Comparisons Among Means	91

Table	Page
20. Analysis of Covariance of Post-Posttest Scores Adjusted for Pretest Scores of Females' Knowledge About Alcohol Among Experiential, Cognitive, and Control Groups with Tukey's HSD Comparisons Among Means . . .	92
21. Analysis of Covariance of Posttest Scores Adjusted for Pretest Scores of Males' Incidences of Negative Consequences Among Experiential, Cognitive and Control Groups	93
22. Analysis of Covariance of Posttest Scores Adjusted for Pretest Scores of Females' Incidences of Negative Consequences Among Experiential, Cognitive and Control Groups	93
23. Analysis of Covariance of Post-Posttest Scores Adjusted for Pretest Scores of Males' Incidences of Negative Consequences Among Experiential, Cognitive, and Control Groups with Tukey's HSD Comparisons Among Means	94
24. Analysis of Covariance of Post-Posttest Scores Adjusted for Pretest Scores of Females' Incidences of Negative Consequences Among Experiential, Cognitive, and Control Groups with Tukey's HSD Comparisons Among Means	95
25. Analysis of Covariance of Posttest Scores Adjusted for Pretest Scores of Lower Division Students' Responsible-Irresponsible Attitudes Among Experiential, Cognitive and Control Groups with Tukey's HSD Comparisons Among Means	96
26. Analysis of Covariance of Posttest Scores Adjusted for Pretest Scores of Upper Division Students' Responsible-Irresponsible Attitudes Among Experiential, Cognitive and Control Groups with Tukey's HSD Comparisons Among Means	97
27. Analysis of Covariance of Post-Posttest Scores Adjusted for Pretest Scores of Lower Division Students' Responsible Irresponsible Attitudes Among Experiential, Cognitive, and Control Groups with Tukey's HSD Comparisons Among Means .	98
28. Analysis of Covariance of Post-Posttest Scores Adjusted for Pretest Scores of Upper Division Students' Responsible-Irresponsible Attitudes Among Experiential, Cognitive and Control Groups with Tukey's HSD Comparisons Among Means .	99

Table	Page
29. Analysis of Covariance of Posttest Scores Adjusted for Pretest Scores of Lower Division Students' Temperance-Intemperance Attitudes Among Experiential, Cognitive, and Control Groups	100
30. Analysis of Covariance of Posttest Scores Adjusted for Pretest Scores of Upper Division Students' Temperance-Intemperance Attitudes Among Experiential, Cognitive, and Control Groups	100
31. Analysis of Covariance of Post-Posttest Scores Adjusted for Pretest Scores of Lower Division Students' Temperance-Intemperance Attitudes Among Experiential, Cognitive, and Control Groups	101
32. Analysis of Covariance of Post-Posttest Scores Adjusted for Pretest Scores of Upper Division Students' Temperance-Intemperance Attitudes Among Experiential, Cognitive, and Control Groups	102
33. Analysis of Covariance of Posttest Scores Adjusted for Pretest Scores of Lower Division Students' Knowledge About Alcohol Among Experiential, Cognitive, and Control Groups with Tukey's HSD Comparisons Among Means .	103
34. Analysis of Covariance of Posttest Scores Adjusted for Pretest Scores of Upper Division Students' Knowledge About Alcohol Among Experiential, Cognitive, and Control Groups with Tukey's HSD Comparisons Among Means	104
35. Analysis of Covariance of Post-Posttest Scores Adjusted for Pretest Scores of Lower Division Students' Knowledge About Alcohol Among Experiential, Cognitive, and Control Groups with Tukey's HSD Comparisons Among Means	105
36. Analysis of Covariance of Post-Posttest Scores Adjusted for Pretest Scores of Upper Division Students' Knowledge About Alcohol Among Experiential, Cognitive, and Control Groups with Tukey's HSD Comparisons Among Means	106
37. Analysis of Covariance of Posttest Scores Adjusted for Pretest Scores of Lower Division Students' Incidences of Negative Consequences Among Experiential, Cognitive, and Control Groups	107
38. Analysis of Covariance of Posttest Scores Adjusted for Pretest Scores of Upper Division Students' Incidences of Negative Consequences Among Experiential, Cognitive, and Control Groups	107

Table	Page
39. Analysis of Covariance of Post-Posttest Scores Adjusted for Pretest Scores of Lower Division Students' Incidences of Negative Consequences Among Experiential, Cognitive, and Control Groups with Tukey's HSD Comparisons Among Means	108
40. Analysis of Covariance of Post-Posttest Scores Adjusted for Pretest Scores of Upper Division Students' Incidences of Negative Consequences Among Experiential, Cognitive, and Control Groups	109
41. Analysis of Covariance of Posttest Scores Adjusted for Pretest Scores of Responsible-Irresponsible Attitudes Among Experimental Subgroups.	110
42. Analysis of Covariance of Post-Posttest Scores Adjusted for Pretest Scores of Responsible- Irresponsible Attitudes Among Experimental Subgroups . . .	111
43. Analysis of Covariance of Posttest Scores Adjusted for Pretest Scores of Temperance-Intemperance Attitudes Among Experimental Subgroups	112
44. Analysis of Covariance of Post-Posttest Scores Adjusted for Pretest Scores of Temperance-Intemperance Attitudes Among Experimental Subgroups	113
45. Analysis of Covariance of Posttest Scores Adjusted for Pretest Scores of Knowledge About Alcohol Among Experimental Subgroups	114
46. Analysis of Covariance of Post-Posttest Scores Adjusted for Pretest Scores of Knowledge About Alcohol Among Experimental Subgroups	115
47. Analysis of Covariance of Post-Posttest Scores Adjusted for Pretest Scores of Incidences of Negative Consequences Among Experimental Subgroups	116
48. Analysis of Covariance of Post-Posttest Scores Adjusted for Pretest Scores of Incidences of Negative Consequences Among Experimental Subgroups	117

Abstract of Dissertation Presented to the Graduate Council
of the University of Florida in Partial Fulfillment of the Requirements
for the Degree of Doctor of Philosophy

EXPERIENTIAL AND COGNITIVE SMALL GROUP APPROACHES
TO ALCOHOL EDUCATION FOR COLLEGE STUDENTS

By

George R. Rozelle

December 1978

Chairman: Dr. Harold Riker
Major Department: Counselor Education

This study investigated the relative effectiveness of two curriculum approaches to alcohol education in modifying college students' attitudes about drinking, knowledge about alcohol, and negative consequences experienced as a result of drinking. The two approaches were an experiential small group approach and a cognitive small group approach. Each approach was implemented within a ten-week undergraduate alcohol education course at the University of Florida using a lecture-discussion format.

The experiential approach was an innovative approach developed by the author to enable students to experience and practice desirable behaviors related to alcohol use. Students participated in role playing various alcohol related situations, planning and participating in a responsible cocktail party, and visiting drinking establishments and alcoholism treatment centers.

The cognitive approach consisted of in-classroom activities such as values clarification exercises, a short film, guest speakers, and

small group discussion. All cognitive group activities were designed to cover the same six basic concepts, related to responsible behavior toward alcohol, covered by the experiential group. The six concepts were: responsible behavior toward alcohol, responsibility in vending alcoholic beverages, responsible hosting, responsible drinking, dealing with alcohol related problems, and alcoholism and treatment. All students attended the one-hour lecture and a one-hour small group session each week.

Students enrolling in the course were randomly assigned to one of ten discussion groups, each led by a pair of specially trained peer facilitators. Five discussion groups employed the experiential approach; five, the cognitive approach.

The experiential and cognitive experimental groups were compared to a control group of students enrolled in two comparable courses on the basis of posttests administered immediately upon completion of the course, then again three months later. The dependent variables investigated were responsible-irresponsible attitudes about drinking, temperance-intemperance attitudes about drinking, knowledge about alcohol, and negative consequences experienced as a result of drinking. The variables were measured by subjects' responses on the corresponding scales of the Student Drinking Questionnaire and the Attitudes About Drinking questionnaire.

Differences in each of the above variables among groups were analyzed via an analysis of covariance using pretest scores as covariates. The analyses were performed on data collected immediately after treatment and three months after treatment. Sex differences and grade level differences on all four variables were also examined.

There were 144 subjects for the posttest analysis. Of that total 52 were in the experiential group, 46 were in the cognitive group, and 46 were in the control group. Follow-up data were obtained from 107 subjects--38 experiential, 34 cognitive, and 35 control. The subjects were approximately equally divided between males and females.

The experiential approach and the cognitive approach both produced significantly ($p < .01$) higher levels of responsible attitudes than the control group. The effects were immediate and lasting over three months. The two approaches were equally effective in producing significant ($p < .001$) increases in knowledge which were also lasting over three months. No immediate significant differences were found among groups in reported incidences of negative consequences of drinking. However, three months after completion of the course both the experiential ($p < .01$) and the cognitive ($p < .05$) groups reported significantly fewer negative consequences than the control group. There were no significant differences among groups in temperance-intemperance attitudes.

In a comparison of group means the experiential group consistently scored higher in responsible attitudes and lower in negative consequences than the cognitive group. The observed effects were not sex specific nor grade level specific.

CHAPTER I

INTRODUCTION

look into the seeds of time,
and say which will grow
and which will not

Macbeth

Much has been said and written in this country, particularly within the last century, about drinking alcoholic beverages and the potential tragic consequence, alcoholism. Unfortunately, the terms drinking and alcoholism have often become intertwined in the beliefs and attitudes of many Americans. Drinking is a necessary, but not a sufficient condition for the occurrence of alcoholism. In fact, most Americans drink safely and wisely without ever developing problems with alcohol. However, the minority whose drinking behaviors lead them into alcoholism suffer from our country's third worst health problem, behind only cancer and heart disease. The treatment of alcoholism has been woefully ineffective. Not surprisingly, we are experiencing in this country a shift in emphasis from remediation to prevention of alcohol problems.

But who can look into a group of young drinkers and say who will become an alcoholic and who will not? Many prevention strategies have attempted to do just that. Under a governing image of alcoholism as a disease with a preexisting, but unidentified etiology, prevention efforts have evolved around early casefinding and treatment for "hidden alcoholics" (Room, 1974a). These efforts are secondary and tertiary

prevention strategies directed at a rather small segment of the population. Davis (1976) has pointed out the need for primary prevention procedures such as alcohol education to reach not only problem drinkers but drinkers and nondrinkers as well. Room (1974b) has suggested we get away from the clinical domain and speak instead of minimizing alcohol problems, a major task in itself!

Alcoholism aside, alcohol related problems have become endemic in the United States. Recent statistics compiled by the National Institute on Alcohol Abuse and Alcoholism indicate the extent of the problem (NIAAA, 1976):

- * Persons with alcohol problems now number an estimated 10 million.
- * At least 36 million Americans are caught in the web of alcohol abuse.
- * About one-third of fatally injured adult pedestrians have a blood alcohol concentration (BAC) of 0.10 percent or higher.
- * About 45 percent of all fatally injured drivers have BAC's of 0.10 or more.
- * An association with alcohol has been found in 64 percent of all murders.
- * An association with alcohol has been recorded in 41 percent of all assaults.
- * An association with alcohol has been found in 34 percent of all forcible rapes.

* Alcohol figures in approximately one-half of all arrests in the United States.

* One-third of all suicides are alcohol related. Alcohol abuse costs the American society an estimated \$25 billion annually in lost production, health and medical expenses, property damage, welfare, and criminal justice system costs.

Per capita consumption continues to rise and with it has come a corresponding increase in alcohol related problems (NIAAA, 1974). Still the liquor industry pushes continually to expand and exploit the market. The use of mass media advertising and clever persuasion techniques has brought about increases in the consumption of beer, wine, and spirits. The impact of advertising on alcohol abuse has been well documented by the United States Senate Committee on Labor and Public Welfare (1976). The nearly half a billion dollars a year being spent on advertising for beer, wine, and distilled spirits, directed primarily at the emerging youth and women's markets, seem paltry in comparison to the \$26 billion returned to the industry (American Business Men's Research Foundation, 1975).

The prevention strategies most frequently applied to combat these alcohol problems are massive advertising campaigns to counter the industry's ads together with formal and information educational programs. However, there is no conclusive evidence regarding the effectiveness of either strategy. Alcohol education programs, very much like their drug education counterparts, often operate without a clear cut philosophy, and little or no attempts are made at scientifically evaluating them. Those evaluations that have been conducted indicate that alcohol and drug education programs have very little positive effect on behavior

(Braught, Follingstad, Brakarsh, & Berry, 1973; Freeman & Scott, 1966; Randall & Wong, 1976).

In fact, evaluations of several drug abuse prevention programs suggest that even though they do increase knowledge, this knowledge does not lead to decreased drug usage but may even lead to increased experimental usage (DeHaes & Schuurman, 1975). The same situation seems true in the case of alcohol abuse prevention programs. A recent evaluation of a short-term alcohol education program at a large Midwestern university revealed that students who participated in the program increased significantly in their knowledge about alcohol, but were not significantly different from a control group in the number of negative consequences experienced as a result of drinking (Engs, 1977b).

It has been shown (Hanson, 1977) that drinking by college students has increased steadily over the last 25 years, but until only recently there have been very few attempts at developing sophisticated alcohol education programs on campus. However, since the beginning of the "University 50 + 12 Project" during the 1974-1975 school year many programs, employing a variety of innovative approaches have appeared around the country (NIAAA, 1976). Yet, the empirical evidence of their impact on college students' drinking behavior is minimal.

Need for the Study

The ever increasing rate of drinking by college students and the recent national interest in minimizing alcohol abuse on campus have raised some pertinent questions that need to be formally addressed. It can no longer be assumed that all educational efforts are productive

and worthwhile. Storm and Cutler (1975) contend that it is not only impractical but also unethical to invest large amounts of time, energy, and public funds to support alcohol education programs that may have little impact on students' drinking behavior unless there are adequate provisions for evaluation.

On the other hand, if a particular methodology can be shown to be effective in increasing college students' knowledge about alcohol, promoting health attitudes and responsible decision-making about drinking, and reducing the incidence of alcohol related problems, then a major stride will have been made in preventing alcohol abuse on college campuses across the nation.

This study, by formally evaluating a unique and innovative alcohol education course involving two educational approaches for college students, fills a void in the literature and makes a contribution to the understanding of alcohol abuse prevention.

Purpose of the Study

The purpose of this study was to determine the relative effectiveness of an experiential and a cognitive approach to alcohol education within the context of an academic undergraduate course in producing immediate and lasting changes in college students' attitudes, knowledge, and behaviors related to drinking.

Rationale for the Study

Recent thinking in alcohol education suggests a shift in focus from an emphasis on knowledge to an emphasis on attitudes about drinking. The subject matter approach which involves the dissemination of factual

information is slowly being replaced by the mental health approach which involves the exploration of feelings and attitudes (Miles, 1974; Russell, 1965). The mental health approach to alcohol education focuses on clarifying ambivalent values and attitudes about drinking, learning to solve problems without alcohol, and making responsible decisions about drinking.

In view of contemporary American drinking practices, alcohol education must address not so much the question of whether or not to drink, but the question of how to drink responsibly and wisely (Russell, 1969). This philosophy involves the recognition that the majority of young people drink, and that educational programs which want to discourage alcohol abuse should encourage those who choose to drink to become responsible drinkers with well informed attitudes about drinking (Williams, DiCicco, & Unterberger, 1968).

This view is especially relevant to the college campus where surveys have shown rates of drinking ranging from 71 to 96 percent of the student body (NIAAA, 1976). By the time most young people get to college they have already made the decision of whether or not to drink. On campus they are now learning how to drink (Jessor & Jessor, 1975).

The responsible drinking approach may be best implemented within the framework of a small group discussion moderated by a non-directive adult leader (Williams et al., 1968) or by peer facilitators (Lawler, 1971; Sorenson & Joffe, 1975). The peer leader approach to small group discussion is one way of effectively avoiding the authoritative presentation of information or opinions while at the same time providing credibility and persuasive ability (Capone, McLaughlin, & Smith, 1973).

Russell (1969) points out, though, that group discussion which dwells in the cognitive domain only, may fall short of effectiveness because knowledge or attitudes acquired vicariously in the classroom must be tested out, and can only help shape behavior within a personal and social context. Ultimately, Russell contends, personal experience likely will be the more persuasive educational force. Taking this idea one step farther, Dr. Morris E. Chafetz, former director of the National Institute on Alcohol Abuse and Alcoholism, has proposed bringing this personal educational experience into the classroom by serving alcoholic beverages in a group setting in the school (Chafetz, 1970-71). This proposal, however, encounters several practical problems such as legal drinking age, parental approval, and school regulations. These obstacles, though, can be easily circumvented in the college setting, particularly in states where adult status is attained at age 18.

Such an experiential approach could very easily be expanded and incorporated into a small group discussion format within the context of a college level alcohol education course covering a several-week time span. The rationale for doing so is that the experiential approach will provide the student with the opportunity to practice rather than talk about responsible drinking behavior. Drinking in a real life setting with the opportunity to monitor their own BAC's gives students a chance to become familiar with their own subjective and objective reactions to various doses of alcohol. This means the student may really learn his limit rather than merely understanding that it is a good idea to know one's limit. Experiencing the feeling associated with a BAC of 0.10 percent is readily internalized, retained, and recalled when the students find themselves in a similar condition later on (Jones & Parsons, 1975).

The experiential approach proposed herein, however, involves much more than learning how to drink. It also involves learning how to be a nondrinker in a drinking world, learning to be a responsible host or hostess, learning to deal with a problem drinker or a friend who has overindulged, and gaining a deeper understanding of the ramifications of alcohol abuse by actually interacting with alcoholics and treatment personnel.

There are several theoretical principles of learning offered in the literature which underlie the rationale for the experiential approach. The eminent psychologist, Carl Rogers, in his book, Freedom to Learn (1969), and a noted alcohol educator, Frances Todd, in her book, Teaching About Alcohol (1964), have suggested several learning principles that lend support to the concept of experiential alcohol education:

- 1) Learning takes place best when the subject matter is meaningful and relevant to students for their own purposes.
- 2) Much significant learning is acquired through doing. One of the most effective modes of promoting learning is placing students in direct experiential confrontation with the task at hand.
- 3) Learning takes place best when students are actively involved in the learning process.
- 4) Self-initiated learning which involves the total involvement of the learner--affect and sensation as well as cognition--is the most lasting and pervasive.

It should be noted, though, that these principles are assumptions about learning that have not been thoroughly evaluated. There is a

need for more empirical evidence to support or refute these views of learning, especially when they form the basis for curriculum planning.

The case for experiential learning is better supported by the literature on attitude change. The theoretical principles of communication and persuasion (Hovland, Janis, & Kelly, 1953) and of cognitive dissonance (Festinger, 1957) indicate that a person's drinking experiences can have a great impact on his drinking attitudes which in turn will influence his future drinking behavior.

Behaviorally induced cognitive dissonance can lead to a change in attitude when external threats or rewards are minimal but sufficient to force compliance. In other words, by placing students in situations in which they must act in a way that represents a responsible attitude and its corresponding behavior, students will tend to accept that attitude as their own. These principles have been supported by empirical data (Hovland, Janis, & Kelly, 1953; Festinger, 1957).

Experiential learning, then, is supported in theory by the above described principles of learning, attitude change, and behavior change. In practice, experiential learning forms the basis for many educational approaches to the development of behavioral skills. Driver education, physical education, vocational education, and some areas of health education, to name a few, all have major experiential components. Why not apply this approach to development of responsible drinking skills? Traditionally, moral, legal, or cultural taboos have precluded experiential learning in alcohol education. Today, however, the liberal university climate and the commonplace acceptance of drinking as a part of college life make such an approach feasible. The lack of supporting

data, though, necessitates the present study to further determine the relative value of this approach. The data that were produced make an important contribution to the literature on alcohol education and the prevention of alcohol abuse.

Overview of the Study

College students at the University of Florida enrolled in the undergraduate elective course, Responsible Alternatives to Alcohol Abuse, were randomly divided into two experimental groups representing the experiential and cognitive small group approaches to alcohol education. Each experimental group contained five small groups, each moderated by a pair of peer facilitators. The small groups employing the experiential approach were involved in activities such as visiting drinking establishments, having a cocktail party, visiting an alcoholism treatment facility, and role playing various alcohol related situations. The small groups employing the cognitive approach were involved in values clarification exercises and group discussions. Films, pamphlets, and resource persons were used to provide factual information and facilitate discussion.

Both experimental groups and a comparable control group were given pretest, posttest, and post-posttest measures of attitudes, knowledge, and behavior in regard to drinking. The main effects of each experimental treatment were determined by analysis of covariance.

Research Questions

This study addressed several questions that have emerged in the field of alcohol education:

1. What effect does an alcohol education course have on college students' drinking attitudes, knowledge, and behavior?
2. Are the observed effects immediate, delayed, or long-lasting over a three month follow-up period?
3. What are the relative effects of experiential and cognitive small group approaches to alcohol education?
4. What are the relative effects of each approach according to sex and college class?

Definition of Terms

Several terms and phrases used in this study may have variable connotations. Most have already been used in the text but are defined below to provide clarification and avoid any further ambiguity. The following definitions apply to the terms as they are used in this study.

Alcohol. Beverage alcohol, or ethanol, that is consumed in the form of beer, wine, or distilled spirits.

Alcohol Abuse. The misuse of alcohol which results in adverse consequences to the individual drinker, his immediate environment, or to society as a whole.

Alcohol Education. An activity or program which provides educational experiences related to alcohol for the purpose of reducing the incidence of problems associated with drinking.

Alcoholism. A condition or illness manifested by the excessive consumption of alcohol deviating from the cultural norm and resulting in a loss of control over drinking and impairment of an individual's personal, interpersonal, familial, societal, occupational, financial, or physical functioning.

Cognitive. Involving primarily intellectual thought and verbal learning processes.

Experiential. Involving the gestalt of cognitive-affective-sensory-motor learning processes.

Negative Behavior Consequences. Problematic or uncomfortable actions, conditions, or feelings experienced by an individual as a result of drinking alcoholic beverages.

Prevention. Procedures which aim to reduce the incidence of alcohol related problems in a specified population via specific or nonspecific strategies.

Problem Drinking. The use of alcohol to the extent that the individual experiences problems directly related to drinking.

Responsibility Toward Alcohol. Attitudes and behaviors involving drinking, nondrinking, and abusive drinking pertaining to oneself and others, which enhance the enjoyment of alcohol and minimize alcohol related problems.

Organization of the Remainder of the Study

The following chapter contains a review of the literature related to American drinking practices and the philosophies, goals, and evaluations of alcohol education approaches relevant to the study. Chapter Three describes the experimental procedures, the subjects, the methods of data collection, and the experimental hypotheses tested. Chapter Four presents an analysis of the results. Conclusions, limitations, and implications of the study are discussed in the final chapter.

CHAPTER II

REVIEW OF RELATED LITERATURE

In order to develop effective educational strategies of prevention of alcohol abuse, it is necessary to understand the drinking practices of the target population. Globetti (1973) has stated that alcohol education programs should be designed for a particular audience based on individual surveys of the target population. Donovan (1977) has issued a caveat in this regard to bear in mind the transitional state of the college years and the high correlation between campus and community factors as determinants of drinking patterns. It would be unwise, Donovan states, to design programs with exclusive relevance to the collegiate drinking scene; "better it would be to adopt norms which are most suited for a plurality of contexts in the greater society and to make those modifications in college policy appropriate to and necessary for the immediate college scene" (p. 12). In other words, a campus alcohol education program should take into consideration drinking practices not only at college but in the American society as well.

American Drinking Practices

Although drinking alcoholic beverages has been a part of American life since the Puritans landed at Plymouth Rock, until the 1950's there had been virtually no systematic studies of American drinking behavior. Even such basic questions as how many people in the United States were

using alcoholic beverages had not been explored. Straus (1973) attributes this dearth of information in part to the highly moralistic context in which drinking and nondrinking were viewed. It was assumed that most people viewed their drinking as a very private matter and would not be willing to provide reliable information. Furthermore, admitting to having used alcohol during the years of national and regional prohibition would have put respondents in a position of admitting to law violations.

The advent of refined survey methodology and changing social attitudes contributed to the emergence in the late 1940's and 1950's of sophisticated epidemiological studies. Riley and Marden (1947) were pioneers in developing a national quota sample to obtain national drinking profiles. They conducted the first widescale scientific investigation of the nation's drinking patterns. The study examined the prevalence of drinkers, their social characteristics, what and how often they drank, and their reasons for drinking. Within the next two decades several state and community surveys had been conducted in Wisconsin (Maxwell, 1952), Iowa (Mulford & Miller, 1959), and California (Knupfer, 1961).

The Mulford and Miller studies of drinkers in Iowa were by far the most comprehensive of the state surveys. In a series of well designed epidemiological studies the researchers identified some definite sociocultural patterns of drinking. Using a quantity-frequency index (Straus & Bacon, 1953) to classify drinkers, the researchers obtained profiles of light, moderate, and heavy drinkers. In the second of five reports (Mulford & Miller, 1960a) it was shown that approximately 40 percent of the adult population of Iowa were abstainers. Of those who

drank, 47 percent were classified as light drinkers, 37 percent as moderate, and 16 percent as heavy drinkers.

Twenty-two percent of the men drinkers were classified as heavy drinkers whereas only 8 percent of the women were heavy drinkers. The proportion of heavy drinkers rose among men with increasing education but declined slightly among women. Heavy drinking was mostly concentrated in the 21-25 age range for males and the 36-45 age range for females. Heavy drinking was more prevalent in urban than in rural residences and was seen more in Catholics than in Lutherans or Methodists. Based on these findings the researchers concluded that drinking in Iowa could be expected to increase as urbanization and education increased.

In subsequent reports (Mulford & Miller, 1960b, c) the researchers identified specific meanings which drinkers applied to alcohol. These meanings were shown to be good indicators of light or heavy drinking. People who drank for personal effects sought more goals through alcohol, placed themselves more often in drinking situations, and were much heavier drinkers than those who drank for social effects. Most of these findings were consistent with other studies at the time and many have been stable over time.

In 1964 Mulford reported the results of a national study that he had conducted the previous year. Many of his findings were consistent with those reported in the Iowa studies. When Mulford's results are compared with those of the Riley and Marden study, 17 years earlier, similar patterns are found in the areas of sex, education, religion, type of residence, and age in relation to rate of drinking. Overall, there was a definite increase in drinking from 1946 (65 percent) to

1964 (71 percent). Although men still drank the most, the greatest increase was shown by women, whose drinking rate rose from 56 percent in 1946 to 63 percent in 1963. Geographically, the Middle Atlantic, New England, and Pacific regions reported the highest drinking rates, whereas the East South Central region was relatively very low.

Using the Quantity-Frequency Index to examine heavy or "deviant" drinking, Mulford found approximately four heavy drinking men to every one heavy drinking woman. Overall, 8 percent were heavy drinkers who drank medium or large amounts of alcohol more than once a month. These "deviant drinkers" tended to be males, college educated, urban, unmarried, and earning above \$5,000. Mulford concluded that individual drinking patterns, including deviant drinking, are socially determined.

Perhaps the most comprehensive recent survey using a national probability sample was reported by Cahalan and Cisin (1968). This survey of drinking practices was conducted throughout the continental United States with a random sample of 2,746 persons representative of the adult household population. The survey was designed primarily as a descriptive study of a wide range of drinking practices and attitudes. Some of the important conclusions reached were: (1) in the United States drinking is a typical behavior and total abstention and heavy escapist drinking are atypical; (2) amount of drinking varies according to the individual's status in society; (3) a higher proportion of women than ever before appears to be drinking; (4) there are some identifiable personality correlates with heavy drinking; and (5) there is a considerable turnover in drinker or nondrinker status for many persons.

A study by Cahalan and Room (1974) focused on problem drinking in the United States. The study was based on American men aged 21-59 who were living in households. The researchers examined 13 problem categories including heavy intake, binge drinking and problems with wife, friends, or police as criteria for classifying problem drinkers.

A key finding was that a majority of American men had experienced at least one type of problem associated with drinking at some time in their lives. As shown in other studies all types of drinking problems were most prevalent in the 21-24 age group. Cahalan's conclusion based on these data was that longer term serious problems with alcohol are usually fostered by one's drinking habits in one's early twenties rather than by habits not acquired until one's forties.

Many authorities, though, believe that Cahalan's conclusion, being based on data acquired from adult populations, should more realistically be modified to include the 18-21 age range or even lower. There is an abundance of evidence that the drinking rate among teenagers is soaring (NIAAA, 1974). Adolescence is now being seen as a critical period for attitude formation toward alcohol and initial experiences with drinking. For these reasons the National Institute on Alcohol Abuse and Alcoholism (NIAAA) recently contracted with the Research Triangle Institute in Springfield, Virginia, to complete a national study of adolescent drinking behavior. The results of this study (Research Triangle Institute, 1975) confirmed some widely held beliefs that adolescent drinking is already widespread and is increasing. Only 27.3 percent of the teenagers (aged 13-18) were abstainers. About one-third were light drinkers and about one-fourth were moderate/heavy to heavy

drinkers. However, despite the high proportion of drinkers, relatively few (approximately 12 percent) reported experiencing problems with their drinking. Based on reported episodes of drunkenness and negative consequences experienced as a result of drinking, the researchers classified 28 percent of the adolescents studied as problem drinkers. Problem drinkers comprised 34 percent of the boys and 23 percent of the girls. Ninety percent of the problem drinkers were moderate to heavy drinkers.

The results point to a cause for concern about adolescent drinking attitudes and behavior. In view of the above and other studies which place the heaviest drinkers in the 18-24 age level and the higher educational levels the importance of studying the drinking behavior of college students is clearly evident.

Drinking Behaviors of College Students

One of the prevailing images of the American college student is that of a frequent drinker. It has long been a widely accepted notion that college men, especially fraternity men, do a great deal of drinking. Women, until recent years, were not considered to be on a par with men when it came to amount of drinking. In spite of these public images, it was not until the 1950's that any serious attempts were made to determine the actual drinking behavior of college students. In their classic study, Drinking in College (1953), Robert Straus and Sheldon Bacon provided the first objective, scientifically obtained data on college students' drinking behavior.

This classic study encompassed 27 colleges selected to represent different types of institutions. By randomly administering questionnaires

to classes of students within each institution, these researchers obtained a total sample of 17,000 students. The participants represented the total enrollment of the 28 colleges but not necessarily all college youth across the nation. By design Mormon and Jewish students were overrepresented in the sample.

The results showed a wide range of differences among colleges. Male students who reported drinking ranged from a high of 98 percent to a low of 55 percent. Female students showed an even greater range from 95 percent to 20 percent. As has been previously shown in studies of the general population, Jewish and Catholic students reported the highest incidence of drinking, while Mormons reported the lowest. Both men and women showed a steady climb in drinking rate from the freshman to the senior years.

Other findings of the study were that the drinking attitudes and behaviors of parents were strong predictors of students' drinking attitudes and behaviors and that most students started drinking before entering college. Beer was by far the most frequently used beverage, followed distantly by spirits and wine.

To better assess the extent of drinking among college students Straus and Bacon developed the Quantity-Frequency (Q-F) Index (previously alluded to in the Mulford studies) which has since been used in original or modified form by many researchers. The Q-F Index places drinkers into any of five type categories representing light, moderate, and heavy drinking. Similar to the finding regarding incidence of drinking, seniors reported the highest percentage of heavy drinking and the lowest percentage of light drinking.

The findings pertaining to amount consumed and frequency of drinking led Straus and Bacon to conclude that "stereotypes of college drinking which include notions of widespread, frequent, and heavy drinking are unrealistic" (p. 116).

In a recently reported 20-year follow-up study to Drinking in College (Fillmore, 1975) some interesting findings were obtained. Of both men and women who had abstained from alcohol in college, 70 percent now drink. Of those previous abstainers who now drink, at least 10 percent may be classed as serious problem drinkers and about a third now experience some drinking problems. This finding suggests that young people who are not socialized into the act of drinking, according to Fillmore, may have difficulties later in life when they do start.

Regarding those persons who were drinkers in college, the great majority not only were drinkers twenty years later, but the relationship between type of drinking reported at the two measurement points was relatively high. As in Cahalan's national probability sample there was some indication of change, but there was also a tendency for heavy drinkers in college to remain heavy drinkers twenty years later. Similarly, early problem drinking was related to later problem drinking. These findings support the view that drinking patterns acquired in college carry over into a person's adult life (Sanford, 1967).

David Hanson (1974) conducted an interesting study in which he examined the drinking attitudes and behaviors of 3,696 college students in 37 colleges and universities across the United States. His findings supported several hypotheses about college students' drinking that were based on the findings reported by Straus and Bacon 20 years earlier.

The incidence of drinking was shown to be higher in males than in females and was positively correlated with socioeconomic status, college year, parental drinking behaviors and attitudes, and urban residence. Hanson also found his predicted associations (based on the Straus and Bacon findings) between incidence of drinking and religious affiliation and between incidence of drinking and incidence of drinking among friends. Beer and liquor were found to be equally popular beverages.

Several important differences, however, between Hanson's findings and the findings of Straus and Bacon should be noted. First, there seems to have been a general increase across all categories in percentage of college students who drink. Second, considerably more freshmen drink now than 20 years ago. Finally, women now drink nearly as much as men, suggesting that traditional social norms are becoming decreasingly salient and forceful among educated women.

In a follow-up to his own study, Hanson (1977) has found that over a five year period the proportion of drinkers has remained stable. However, the degree to which parents influence drinking behavior has decreased while peer influence has increased. These findings support the notion that peers may effectively be used in alcohol education programs on the college campus.

Hanson's earlier finding that the incidence of drinking by freshmen has increased tremendously may in part account for the overrepresentation of freshmen found in college disciplinary referrals for drinking that were reported by Lemay (1968). More freshmen are drinking and experiencing more problems as a result. Liberal college attitudes toward drinking enable the beginning freshman to learn to drink, perhaps

for the first time without parental restrictions. As Lemay further points out, freshmen may experience troubles because of both relative inexperience with drinking and inexperience in manipulating college authorities.

Some of the most recent findings about college students' drinking practices are reported by Engs (1977a; in press). Surveying 13 colleges and universities from around the country Engs found that although the vast majority of students drink, they are lacking in accurate knowledge about the facts concerning alcohol and drinking. These findings suggest that many students subscribe to a variety of drinking myths which may contribute to irresponsible or problem drinking. Engs recommends that campus alcohol awareness programs include factual information as part of their program thereby increasing students' general knowledge about alcohol and giving them basic facts for making responsible decisions about alcohol.

Another important finding of Engs' studies is that although drinking had increased there was no comparable increase in negative consequences experienced as a result of drinking. Engs suggests that the widespread feeling that problem drinking is increasing in college may be unwarranted.

Kraft (1976) recently reported that based on data collected from visits to several campuses: (a) alcohol abuse is a common problem at most schools; (b) drinking is an accepted part of college life; (c) heavy drinking is relatively common on many campuses; and (d) at most campuses proportionately few students had been identified as alcoholic or severe problem drinkers.

Several independent surveys of drinking behavior on single campuses in different parts of the country have produced remarkably similar findings. Recent studies at Oregon State University (Penn, 1974), Delta State University (Glasco, 1975), the University of Texas (Hill & Bugen, 1976) and the University of Florida (Fagerberg, 1975; Panken, Gonzalez, & Martin, 1976) report drinking rates ranging from 85 to 95 percent. Drinking rates at these institutions tend to be higher in fraternities and off campus residences. Most drinking occurs in a social context.

Other studies have attempted to identify personality factors which may influence college students' drinking behavior. Jessor, Carmen and Grossman (1968) explored the hypothesis that the use of alcohol by college students may serve as alternate behavior for the attainment of goals otherwise felt to be unobtainable or for coping with failure to attain valued goals. The results suggested that the lower the expectation of needs satisfaction, the greater the recourse to alcohol and alcohol related consequences.

Sanford and Singer (1968) found that nondrinking, moderate drinking, and heavy drinking correlated with certain personality types. Moderate drinkers were shown to be associated with an integrative personality, nondrinkers, with high scores in authoritarianism, and heavy drinkers with impulse expression. The researchers contend that the basic aim of alcohol education in college should be the integration of behavior and personality.

The research about college students' drinking behaviors has been conducted with the intent of providing information which will be useful

in developing effective alcohol education and awareness programs on the college campus along with the prevention and treatment of alcohol related problems.

Colleges and universities have excellent opportunities to offer alcohol education that can contribute to the overall development of students and to minimize students' alcohol related problems. In the words of Nevitt Sanford, in his well-known book Where Colleges Fail (1967):

We can begin by recalling that college students, in general, are still caught up in the problems of how to deal with authority, manage impulses, maintain self-esteem, and establish a suitable identity; and that in the normal course of events, they rapidly become more knowledgeable and sophisticated than high school students. One aspect of their general development is a liberalization of their attitudes toward drinking and a gradual increase of integration in the drinking that occurs. But these changes do not just happen inevitably as functions of increasing age or of residence at a college; they are the result of educational experiences, some of which have been planned. Many students develop very little in college, and few develop as well as they might. (p. 126)

Minimizing Alcohol Problems

The widespread prevalence of drinking on our college campuses has caused a great deal of concern among the general public, the mass media, campus officials, and national authorities. In spite of this concern there have been very few programs on campuses across the country to deal with the prevention of alcohol abuse. As a result NIAAA recently began a massive effort aimed at changing this situation. The "University 50 plus 12 Project" brought together one university in each state plus 12 private minority schools during the 1974-75 school year. The aims of the project were threefold: (1) to gather

information about drinking attitudes and practices on the campus;
 (2) to disseminate information about alcohol, its use and abuse; and
 (3) to encourage the development of campus alcohol abuse education and
 prevention programs (Kraft, 1976).

This effort gave birth to many new programs and provided the
 impetus for the expansion of existing programs on campuses across the
 nation. Another outgrowth of this project was The Whole College Catalog
 About Drinking (NIAAA, 1976). This publication, prepared by the National
 Clearinghouse for Alcohol Information, provides a comprehensive guide
 for campus alcohol abuse prevention programs.

The renewed interest in prevention in our country has given rise
 to some new thinking about prevention. Since E. M. Jellinek (1952)
 first documented the progressive nature of the illness of alcoholism
 it has been widely accepted that prevention and early intervention are
 preferable to the treatment of alcoholism. This view is especially
 relevant when one considers the relatively low success rates of existing
 treatment approaches (Armor, Polich, & Stambul, 1976). The case for
 prevention is well stated by Chafetz (1970-71):

It is a medical truism that almost no condition has ever
 been eradicated by treating casualties. This does not
 mean that treatment of the afflicted should be neglected;
 it merely recognizes that treatment is a holding effort,
 that cannot in the long run control or minimize the effects
 of the medical or psychosocial problems. Regardless of how
 effective our therapies become, treatment will never turn
 back the alcoholic tide. Prevention has been, and will
 continue to be, the most effective means of minimizing
 public health problems. (p. 329)

Prevention, however, is more than just reducing the incidence of
 alcoholism. Robin Room (1974b) emphasizes that it is time to get away
 from the preventing illness model and start thinking in terms of
 minimizing alcohol problems. This is especially true for the campus

environment where, as Kraft has pointed out, alcoholism is rarely seen but heavy drinking and problems resulting from drinking are common.

Chafetz extends this point by saying that our preventive philosophy should be to aim to "inculcate societies with responsible drinking behavior and to interlard alcohol use with all ordinary social behavior by teaching young people how to drink responsibly, without the ill effects, and for benefit only" (Chafetz, 1970-71, p. 348).

Centuries of evidence have shown us that some societies drink and yet suffer minimal alcohol problems, while others drink with major alcoholic disturbances as a consequence. Knupfer (1960) has reported that alcohol problems are rare in societies where drinking is accepted but drunkenness is accepted only on special occasions such as: where drinkers are isolated from potential negative consequences, where drinking is a part of a religious ritual, and, where drinking is almost exclusively a social affair.

In the United States, though, we have no unifying attitudes or standards of responsible behavior toward alcohol. Cultural ambivalence toward alcohol is seen as a major contributing factor to our high rate of alcohol related problems. The Cooperative Commission on the Study of Alcoholism has called for the establishment of national standards for responsibility toward alcohol and a unified national policy for dealing with alcohol problems as our essential major prevention goals (Plaut, 1967).

Experts agree that if alcohol related problems are to be minimized in the United States two types of social change will have to come about:

the modification of American drinking attitudes and behaviors and the encouragement of conditions which lead to improved mental health of individuals and families (NIAAA, 1972).

Alcohol Education

Historical Perspective

Alcoholologists have said for years that the best means of primary prevention is alcohol education. But over the last 100 years there has been very little agreement on the goals and objectives of alcohol education. There has been a similar lack of agreement on specific approaches for the implementation of educational programs.

In her recent comprehensive historical review of alcohol education literature, Milgram (1976) has noted that alcohol education in the United States has strong roots in the turn of the century temperance movement. Prior to the 1930's the only approach to alcohol education was the "evils of alcohol" approach. The goal of such education efforts was to promote abstinence. With the repeal of prohibition there emerged a new concept in the middle and late 1930's of including alcohol education in health curricula in a scientifically accurate manner. Both approaches remained strong in the 1940's but the evils of alcohol approach was gradually losing force. In 1949, Raymond G. McCarthy published Alcohol and Social Responsibility: A New Educational Approach in which he advocated a problem solving approach. This marked the beginning of the recognition of the role of attitudes in influencing drinking behavior.

In 1965, Atkins and Gwyn, in Teaching Alcohol Education in the Schools, recognized the value of changing attitudes through group discussion and active learning activities but still the emphasis was on factual information.

They claimed that the factual approach offers greatest promise of attaining the goals of an alcohol education program and of providing part of the solution to the problems of alcohol abuse in our society.

By the 1960's Milgram points out, the objective, facts only approach was well ingrained in the research and commentary literature. However, the alcohol education materials developed for use in programs across the country still had negativistic overtones in regard to alcohol use and most were geared toward the general population rather than the young (Milgram, 1975). The 1960's also saw a growing emphasis on the school's responsibility and the community aspects of alcohol education (McCarthy, 1964; Mullin, 1968).

The primacy focus of much of alcohol education during this period was alcoholism. Researchers (Russell, 1967; Pasciutti, 1967) were beginning to recognize the merging of alcohol education and alcoholism education in school curricula. The objectives were to provide factual information about the drug alcohol and the potential risks involved in its use.

In the 1970's the emphasis has shifted away from the subject matter approach in favor of the mental health approach. The National Institute on Alcohol Abuse and Alcoholism has recently shown considerable interest in young people and alcohol. It has supported educational approaches that promote responsible decision-making about the use of alcohol while encouraging youths to develop healthy attitudes about themselves (U.S. DOT, 1975).

The most recent outgrowth of this philosophy has been the development by the National Center for Alcohol Education of a new series of alcohol education courses entitled Decisions and Drinking. The program

is a structured learning experience aimed at helping participants make informed personal decisions about the use of alcohol (Richmond, 1977-78). Another example of this approach is the recently developed national program for high school students by the National PTA Alcohol Education Project (Kimmel, 1976).

Current Status

In their critical review of alcohol education Freeman and Scott (1966) found the status of alcohol education to be dismaying. The researchers noted that most programs operated without a clear cut philosophy; there was no evidence of impact; and little has changed in respect to the lack of goals, objectives, and evaluations of existing programs.

Other concerns about the status of alcohol education include the lack of a national approach to education, the ineffectiveness of teachers in teaching alcohol education, and the poor quality of educational materials. Robert Russell (1965) has addressed the matter of the lack of a uniform national approach to alcohol education. He noted that decisions about which approaches to implement in any given setting are subject to local control. As a result one school system may adhere to the subject matter approach while a neighboring system may endorse the mental health approach. Russell states, however, that there is no reason why these two approaches cannot be integrated by a skillful teacher.

Skillful teachers are not always easy to come by. Aubrey (1971) has noted that the traditional didactic teacher role is not appropriate because advice giving by teachers and the objective presentation of facts are not sufficient for producing desirable behaviors. Moreover,

teachers are not always well informed of the unbiased, accurate facts about alcohol (Mullin, 1968). It has also been suggested that teachers tend to avoid alcohol education because of their assumption that they must teach abstinence (Unterberger & DiCicco, 1968a). Finn has pointed out that teachers may have definite attitudes about alcohol but these should never be expressed in the classroom because, in the first place, they may not be healthy attitudes and, in the second place, their expression may discourage students from exploring and expressing their own attitudes.

The National Center for Prevention and Control of Alcoholism has shown a great deal of concern about quality teacher preparation and effective teaching techniques (Mendelson, 1969). Sands (1969) has reported several guidelines prepared by the Center for improving teaching about alcohol and developing adequate teaching materials.

Existing teaching materials have been evaluated by Milgram (1975) and found to be lacking in consistency, accuracy, and objectivity; although the overall quality and quantity of alcohol education materials are increasing. The major proportion of the materials were found to be general in subject matter and geared toward general audiences, with disproportionately smaller amounts designed for teachers or college and high school students. Sanders (1975) has warned that there are many poor brochures, pamphlets, filmstrips and other teaching aids on the market. He warns that all materials should be critically evaluated in terms of applicability to the audience and objectivity before being used in any program. These concerns are echoed by Robert Robinson who as director of the Addictions Research Foundation in 1969 said:

"Unless our teaching materials and our handling of this topic in the classroom present fairer statements of fact . . . the effectiveness of teaching on this topic cannot be increased" (p. 3). The writers agree, though, that adequate materials can be a valuable adjunct to any educational program.

Goals and Objectives

In 1968(a) Unterberger and DiCicco suggested that "an appropriate goal for alcohol education is to prevent irresponsible use or nonuse of alcohol by encouraging the development of attitudes which are found in moderate drinking groups with low rates of alcoholism. This goal applies equally to young people and adults" (p. 3). Williams, DiCicco, and Unterberger (1968) have reported several characteristics of ethnic groups which have low rates of alcoholism: (a) low social pressure to drink; (b) negative social sanctions against excessive drinking; (c) positive, accepting attitudes toward moderate, nondisruptive drinking; (d) freedom from ambivalence or conflict in the drinking; and (e) gradual socialization of children in the use of alcoholic beverages. The objectives, then, of alcohol education do not necessarily involve endorsement of abstinence or moderate drinking for oneself, only a tolerance for these behaviors in others. What is desired, though, is an intolerance for excessive drinking for oneself as well as for others. This view represents the approach of many alcohol education programs today.

The objectives are modified, somewhat, for many college and university alcohol education programs to focus more on promoting responsible drinking, i.e. drinking which does not lead to negative consequences

(NIAAA, 1976). The promotion of responsible drinking is important because, as previously pointed out by Jessor and Jessor (1975), college students have already decided whether or not they will drink; most have decided they will drink and are going through the process of learning how to drink. The objectives, then, of alcohol education for college students should also involve the endorsement of responsible drinking attitudes for oneself as well as for others.

Evaluation of Effectiveness

As noted above, although alcohol education approaches and methodologies have received considerable lip service there have been very few systematic evaluations of any approach. As Braught and associates (1973) pointed out there is not enough existing empirical evidence to justify choosing one method over another.

The evaluations of alcohol and drug education programs that have been reported to date have shown that most are successful in increasing knowledge; some are successful in changing attitudes; the attitude changes are generally immediate but short-lived; and there is very little or even a negative effect on drinking and drug taking behavior (Randall and Wong, 1976; Robinson, 1975).

A recent evaluation of a short-term drug education program was conducted by Swisher and Crawford (1971). The study compared three approaches geared to different educational levels. The three groups of subjects were private school students in the ninth grade, tenth and eleventh grades, and twelfth grade. The program was aimed at reducing the incidence of illicit drug use. The educational strategies were implemented within small and large group sessions of short duration.

The ninth grade students were divided into three small ($n=23$) groups each led by the same group leader, a psychiatrist. Each group session lasted one hour. One week later the tenth graders participated in an hour long large group ($n=70$) session led by three psychiatrists and then were divided into three small discussion groups for two additional hours. The eleventh graders received the same treatment one week after the tenth graders. One week later the last group, the twelfth graders, received the same treatment with the exception that several patients from a hospital's adolescent drug unit were brought in as resource persons for both the large and small groups.

For purposes of evaluation a pretest consisting of four scales was administered to all subjects. The first scale was a 14-item attitude scale to measure opinions about issues related to drug abuse such as the penalties applied to drug users and the legalization of marijuana. A 30-item knowledge scale was used to measure knowledge in five areas: narcotics, marijuana, LSD, amphetamines, and barbiturates. Drug taking behavior was assessed by a 33-item behavior scale. The fourth scale was a student evaluation of the program. Posttesting of all groups was conducted one week after completion of the final group session (the twelfth graders).

An analysis of variance revealed no significant differences in attitudes among the treatment groups. There was a significant increase in knowledge for all three treatment groups on pre/post measures but there were no significant differences among treatments. No significant behavior changes were found.

The author concluded that short-term programs may have little effect on students' attitudes about drug use and that almost any discussion

regarding drugs will have some impact on students' knowledge. These conclusions do not necessarily apply to all short-term drug education programs and cannot be considered decisive. The design of the experiment did not control for the effects of current history or the differential retention periods among groups before posttesting which could have affected the observed outcomes.

A short-term alcohol education program was recently evaluated by Ruth Engs (1977b) at Indiana University. The program was designed to be presented in two to three hours to small groups of students in residential units, social club settings, or classrooms by trained peer group leaders. The program presentation began with a 13 minute animated film called Booze and You which clears up popular myths associated with drinking and gives hints for responsible drinking. The remainder of the program was devoted to small group discussions using five values clarification exercises.

The students who served as facilitators received an eight hour training package which included communication and leadership skills, the purpose and use of values clarification exercises, information about alcohol, and community referral sources. Most of the students had had some previous experience in peer counseling or group leadership.

To evaluate the effectiveness of the program Engs randomly divided student volunteers into an experimental and a control group. The control group (n=33) received the same experimental treatment, film and values clarification exercises, as the experimental group (n=50) but the content of the control group presentation was human sexuality. All students were pretested using the Student Alcohol Questionnaire (SAQ). In addition to 11 demographic items, the SAQ

contains 36 questions concerning information about alcoholic beverages and popular drinking myths. There are 23 items addressing drinking behavior such as frequency of drinking and incidence of negative consequences experienced. The posttest was administered immediately after completion of the program; then again three months later.

The results showed that the experimental group scored significantly higher in knowledge on both the immediate and the three month follow-up posttests as a result of the treatment. However, data revealed that the program had no effect on the drinking behaviors measured by the instrument. These results appear to validate other reports which have suggested that an increase in knowledge does not necessarily change behavior and that alcohol education needs to focus more on attitude change than on facts alone. Engs made no attempt at assessing attitude change as a result of the program. The group discussion approach was not found to be effective in changing behavior when employed in a short-term program. This approach has not been evaluated, though, in a longer term program such as the alcohol abuse course proposed in the present study.

Williams, DiCicco, & Unterberger (1968) evaluated an alcohol education program the aim of which was to encourage responsible and discourage irresponsible drinking behavior by developing responsible attitudes such as tolerance for abstaining, tolerance for temperate drinking, and intolerance for excessive drinking or the use of alcohol for personal effects. The program consisted of small group discussions led by specially trained adult leaders. The students who participated in the program were male high school juniors at a private suburban Catholic school. Two discussion groups met one hour per day for one

week. The stated purpose was to allow students to freely explore their attitudes about drinking, compare them with others, and acquire new attitudes based on accurate information. The control group focused on various social issues for discussion.

A questionnaire consisting of two attitude scales, 15 true or false fact statements about drinking and 24 questions covering drinking behavior and attitudes of students and their parents, was given at the beginning of the program, immediately following the program, one month after completion of the program and, finally, one year later. The results indicated that the program produced a long term increase in knowledge and a favorable attitude change, indicated by a higher tolerance for temperate use and lower tolerance for intemperate use, which lasted more than a month but less than a year. It was not made clear whether the program had any effect on behavior.

Responsible Behavior Toward Alcohol

If one is to accept as a goal of alcohol education the encouragement of responsible behavior toward alcohol it is helpful to delineate specific responsible drinking behaviors and clarify the concepts involved. For even in a society that lacks national drinking patterns, such as those found in low alcoholism cultures, it is still possible to behave in a healthy and safe way in regard to alcohol (NIAAA, 1974).

The concept of responsible drinking in alcohol education represents perhaps the greatest departure from the traditional evils of alcohol approach. Particularly avant-garde views of alcohol education have been offered by Chafetz (1970-71) who advocated teaching students to drink responsibly in the classroom; and by Hames (1971) who suggested

that students should be taught that it is possible to drink and drive safely. Both views have met considerable resistance, but the general idea seems to have merit.

The concept of responsible drinking in alcohol education was introduced into the literature by Lolli in his book, Social Drinking, in 1960. Applying his Italian heritage to the American drinking scene, Lolli came up with some useful observations about how to enjoy drinking without being hurt or hurting others by it. Lolli emphasized the concept of alcohol as a food item to be consumed with meals rather than solely for personal effects.

Dolan (1976) has made several observations about responsible drinking. He noted that the responsible drinking theme has been adopted by the American JayCees' "Operation Threshold" project which defines responsible drinking as drinking which is safe, healthy, and sensible. The aim of the national project is to teach people how to drink. Dolan also notes that the NIAAA definition of a responsible drinker is one whose drinking does not harm himself or others around him. Dolan suggests a more comprehensive definition to include knowing one's limit, drinking as an adjunct to an activity rather than the primacy focus, and drinking that maintains human dignity.

The Whole College Catalog About Drinking (NIAAA, 1976) and the Second Special Report to the U.S. Congress on Alcohol and Health (NIAAA, 1974) provide specific guidelines for the responsible use of alcohol. These are:

1. Make sure that the use of alcohol improves social relationships, rather than impairing or destroying them.

2. Make sure that alcohol is used carefully in conjunction with other drugs.
3. Respect the person who chooses to take alcohol in moderation or who chooses to abstain; do not be insistent about refilling drinks. Provide nonalcoholic drinks as alternatives.
4. Provide food with alcohol at all times; especially proteins such as dairy products, fish and meats.
5. Provide transportation or overnight accommodations for those who are unable to drive safely.

As is evident from the guidelines, responsibility in the use of alcohol goes beyond one's own personal drinking behavior. It also includes behaving in a way that will encourage responsible drinking by others. In this sense it is more appropriate to speak of responsible behavior toward alcohol than merely responsible drinking.

It is generally assumed in alcohol education efforts that the likelihood of a person exhibiting this type of behavior depends on the possession of well informed health attitudes about drinking. However, as Goodstadt (1975) points out, "A review of the research evidence reveals that the most readily influenced psychological element is level of knowledge, followed (at some distance) by the attitude change, and almost out of sight of any behavioral change" (p. 227). Since almost all approaches have been successful at producing knowledge increases, it is necessary to take a closer look at the elusive concept of attitude; how it is changed; and how it relates to behavior, especially drinking behavior.

Attitude Change

The social psychology literature is filled with research evidence and theoretical statements about the mechanisms of attitude change and its corresponding effect on behavior. For purposes of this paper only the major theoretical foundations and research findings that are particularly relevant to the present study will be discussed.

An attitude is a hypothetical construct that has cognitive, affective, and conative components. Attitudes are distinguished from beliefs or knowledge which are cognitive entities by the presence of affect and motive, or potential for action. Attitudes possess many variable properties such as direction (favorable or unfavorable), magnitude, intensity, ambivalence, and salience, among others. Because attitude is a hypothetical construct it cannot be directly measured but must be inferred from subjects' responses. The literature dealing with attitude measurement is very extensive (Scott, 1968).

The theoretical foundations of attitude change are best expressed in two monumental books that were published in the 1950's but still are widely quoted in the literature and serve as bases for current research in the field. Communication and Persuasion (Hovland, Janis, & Kelly, 1953) systematically analyzes the nature and process of attitude change. A Theory of Cognitive Dissonance (Festinger, 1957) examines the process by which attitude change is produced in the presence of inconsistencies between what a person believes and does.

Several of Hovland's findings are relevant to the present study. Hovland has examined each component of the attitude change process:

the communicator; the message; the audience or receiver; and the response. The most persuasive communicator was found to be one who was perceived as knowledgeable and trustworthy. Communicators with the highest degree of credibility produced the greatest immediate effect on attitudes. However, it was found that over time the low credibility speaker seems to achieve a nearly equal effect. In alcohol education it is desirable to produce long lasting changes. Hence, the value of bringing in expert speakers may be exaggerated. In terms of lasting effects the other components of the persuasion process may be more important than the perceived credibility of the sources. The meaningfulness of the message has been shown to be especially important in determining long range retention.

Hovland and his associates also reported that when working with intelligent highly educated audiences, such as college students, it is best to present both sides of the issue and let the audience draw its own conclusions based on rational arguments. This evidence suggests that the non-directive small group discussion approach is most viable.

In terms of persuasibility it was found that persons who had low self esteem, inhibited aggression, and depressive affect tended to be the most persuasible. Interestingly, these personality characteristics are also often associated with proneness for alcohol abuse (Armor, Polich & Stambul, 1976). Persuasibility has also been found to be associated with the magnitude and intensity of initial attitudes. Those with ambivalent attitudes seem to be more susceptible to persuasion than those with intense attitudes in either direction. It seems, then, that if ambivalence toward alcohol and personality traits such as low self-esteem and depressive affect contribute to alcohol abuse, then

programs aimed at changing attitudes can be especially effective in reaching those who could benefit most.

Hovland also reported that active participants and verbal expression seem to be very effective in changing a person's attitude when that person is asked to respond in a way contrary to his or her own views. Role playing studies have shown that when a person assumes a role in which he must speak or act in a manner that is inconsistent with his initial attitude, he will tend to resolve the inconsistency by accepting the new attitude.

This particular phenomenon was examined in depth by Leon Festinger (1957) and assimilated into a theory of cognitive dissonance. Festinger contends that when a person experiences inconsistencies, or dissonance, between his cognitions and his behavior or his environment he will be activated to try to relieve the dissonance and achieve consonance, or internal consistency. To resolve cognitive dissonance a person may either change his cognition or change his behavior. In practical application, if a person is made to act overtly as if he had a responsible drinking attitude (forced compliance), then the overt compliance will result in internal opinion change to the extent that pressures put on him to comply are minimal.

The experimental application of cognitive dissonance theory to drug education programs has produced mixed results. Swisher and Horan (1972) found that a cognitive dissonance treatment produced a significant change in college students' attitudes about drug use. Subjects who had indicated a preference for "direct experience" showed more conservatism about drug use after the treatment. However, the treatment was very

short term and there were no follow-up measures of behavior.

Warner, Swisher, and Horan (1973) compared four types of groups.

These groups were behavioral counseling, cognitive dissonance, placebo counseling, and control. No significant differences were found among the groups on posttest measures of attitudes toward drug use.

The principles of attitude change as they apply to alcohol education have been thoroughly studied by Weir (1969). Weir concluded that an attitudinal model is an effective procedure for presenting the psycho-social issue of alcohol education. Weir found that the most enduring attitude changes over time resulted from presenting both sides of an issue and developing a high degree of ego-involvement on the part of the students.

Freeman and Scott (1966) have underscored the importance of understanding the basic principles of attitude change when developing and implementing an alcohol education program. They note that alcohol education is a mode of communication and persuasion; and the findings of studies of opinion and attitude change most certainly apply.

One component of the persuasion process that has received considerable attention by alcohol and drug education researchers is the communicator, or the source of the information. Smart and Fejer (1972) examined the credibility of various sources of drug information in terms of Hovland's criteria for credibility: expertness and trustworthiness. The researchers found that the sources that the students perceived as most expert (scientists and doctors for nonusers; ex-users for users) were also felt to be the most trustworthy because of perceived similarity of attitudes. It was concluded that expertness and trustworthiness were closely related; but there was a large difference between users and nonusers in whom they viewed as highly credible sources.

However, for the general student population, because of the illicit nature of drug use and the prohibitionist history of alcohol use, scientific authorities were seen as holding different views and trying to manipulate, while teachers were seen as being less knowledgeable about drugs than most of the students. It follows, then, that highly credible communicators would be students themselves. In line with this thinking the peer approach to alcohol and drug education has gained popularity in recent years.

The Use of Peers

The peer approach to alcohol and drug education programs involves the abandonment of the authoritarian presentation of information in favor of student input in planning and implementing the program. The main advantage of this approach, according to Lawler (1971), is that students are being involved in the solution of a mutual problem. The peer program not only has been found to be successful in changing attitudes but is very popular with students, teachers, administrators, and the community. Peer leaders, Lawler points out, are valuable resources that are easily accessible in any community. Krippner (1973) points out that one of the reasons most drug education programs have failed is because they lacked student participation and involvement. Capone, McLaughlin, and Smith (1973) have emphasized the persuasive ability of peers and the need for active student participation. In a comprehensive analysis of nine different models of drug education Wong (1976) has concluded that the peer approach is one of the few approaches that has consistently met with success.

In spite of the widespread accolades that have been delivered upon the peer approach, there has been very little empirical evidence produced to date to back up the claims of success. One recent study (Smart, Bennet, & Fejer, 1976) found that a peer oriented program produced a significant increase in knowledge, no change in attitude, and a significant negative effect on drug taking behavior. Drug use actually increased following the program. The researchers, however, pointed out that certain methodological shortcomings adversely affected the success of the program.

Another recent study (Sorenson & Joffe, 1975) evaluated a peer oriented drug education program within a community youth project. The results showed an increase in positive attitudes and an increase in knowledge. The effect on behavior was not determined.

The use of peers in alcohol education programs has been advocated by many researchers in the field (Finn, 1975; Maloney, 1976; Milgram, 1974). The training and use of peer educators, among other factors, is presently being evaluated in four model prevention programs funded by NIAAA. These programs are the CASPAR Alcohol and Drug Education Program of Somerville, Massachusetts; the Teenage Alcohol Abuse Prevention Program of New York City; the University of Massachusetts Demonstration Alcohol Education Project; and the Seattle, Washington, Alcohol Education Curriculum Project (NIAAA, 1977).

The Use of Small Group Discussion

The small group discussion approach to alcohol education has been described by Unterberger and DiCicco (1968b). Their view is that any

approach to teaching about alcohol must primarily provide students with the opportunity to examine their own attitudes and beliefs. Facts have a minor relevance to gaining a true understanding of one's own feelings and behavior in relation to alcohol. It is contended that before any new learning can take place, feelings must be allowed expression, and old ideas must be critically examined in a nonthreatening manner. Unterberger and DiCicco contend that this ventilation of feelings, unlearning of myths, and incorporation of new informed attitudes is best achieved through small group discussions.

It is further pointed out by Unterberger and DiCicco that small group discussion techniques have special value for youth since they are greatly influenced by the peer group. Expression and comparison of opinions, beliefs, and experiences among peers is seen as an essential component of attitude change.

The typical small group consists of 8 to 12 students and a non-directive adult leader who facilitates group discussion and serves as a resource person at appropriate times. Structured activities such as games, dramatizations, student investigations, audio-visual aids, resource persons, and values clarification exercises may easily be incorporated into the small group format (Miles, 1974; Todd, 1964).

An Experiential Approach

Although proponents of the use of small group discussions recognize the importance of active student participation and ego-involvement, the learning techniques employed stay almost exclusively within the cognitive realm, i.e., verbal interaction on an academic level. Steinaker and Bell

(1975) contend that there is a definite need in education to get out of the cognitive realm and into the experiential realm. They note that existing taxonomies in the cognitive domain, affective domain, and psychomotor domain view human experience only through the parameters of those domains. Looking at experience as a gestalt human activity encompassing cognitive, affective, and behavioral domains, Steinaker and Bell propose an experiential taxonomy of educational objectives whereby the learner progresses through five learning steps: exposure, participation, identification, internalization, and dissemination. At the internalization stage the student acquires, as his own, new attitudes and behaviors as a result of the experience. William Torbert, in his book Learning From Experience (1972) proposes a detailed theory, or model of experiential learning stemming from a phenomenological approach to human learning. Torbert cites four different but inter-related levels of human experience: (1) the world outside; (2) one's own behavior; (3) one's internal cognitive-emotional-sensory structure; and (4) consciousness, a transcognitive phenomenon. Whereas we typically are aware of functioning at only one level of experience at a time, resulting in learning that may be illusory, experiential learning transcends all four levels so that one becomes aware of the qualities, patterns, and consequences of one's own experiences as one experiences them.

The concept of experiential learning is not new to educational theory. Doll (1972) cites experiential learning ideas in early Deweyan theories. Drawing upon the framework of Dewey's ideas, Doll emphasizes that the goals, activities, and behaviors of the student should not be

determined for him but should be determined by him within a reasonable structure. In line with this view other writers have advocated the development of college curricula along the line of practical and experiential learning (Keeton, 1976; Schwab, in Doll, 1972).

Applying these educational principles to the area of health education, Parcel (1976) has noted that for the proper development of health skills the student needs to have opportunities within various contexts. Role playing is suggested as one way to achieve the goal but Parcel points out that the classroom is very limited in offering the pragmatic use of these skills. To remedy the situation he suggests that various means of extending learning experiences outside the confines of classroom walls need to be developed.

Experiential learning is also important in alcohol education. Boe (1971) states that a person's own responses to personal experience motivate him to action. She suggests that educational methods must include means for individuals to have these experiences to gain their own insight. But just what these educational methods are is a question that has yet to be answered. Outside of the conventional role playing exercises and student projects, creative experiential techniques have seldom been mentioned in the literature.

A notable exception has been offered by Chafetz (1970-71). The former NIAAA director proposed the very practical approach of bringing responsible drinking into the classroom rather than merely talking about it:

This learning experience, for those who will choose to drink and those who will not, provides factual information about alcohol use during hygiene instruction at school and

college levels. This instruction emphasizes the differing effects between drinking rapidly versus sipping slowly; consuming liquor with food in the stomach versus drinking on an empty stomach; drinking under tense circumstances alone or drinking while relaxed, with people, and communicating; how intoxication is sickness and is unhealthy behavior. By providing on a voluntary basis group experiences with alcohol under supervision, young people may familiarize themselves with their own responses to alcohol under variable conditions and learn how to avoid disastrous, unhealthy, episodes. (p. 348)

Chafetz's view has been critically evaluated (Brotman, 1970-71; Edwards, 1970-71; Lolli, 1970-71; Mendelson, 1970-71) and termed premature, doubtful, and impractical but has not been subjected to empirical testing.

One attempt at incorporating the ideas of Chafetz, the concept of responsible behavior toward alcohol, and the experiential learning approach into the college classroom was conducted by the author (Rozelle & Gonzalez, in press) and serves as the basis for the present study. Two small discussion groups were conducted by the author utilizing an experiential approach in one group and a cognitive discussion approach in the other. The students in the experiential group visited bars and practiced responsible drinking and hosting at a cocktail party while the students in the cognitive group discussed related concepts. Both groups were compared on pretest and posttest measures with a control group.

The results indicated that the cognitive group showed the greatest gain in knowledge but only a slight gain in responsibility of attitudes and a slight reduction in negative consequences of drinking. The experiential group, on the other hand, gained only slightly in knowledge but

a significant gain in responsibility and a significant decrease in negative consequences. No follow-up data were available on the long term results of the program but the results obtained justify further investigation.

Summary and Implications for the Study

It has been shown in this chapter that moderate drinking is typical behavior in our American culture, while total abstinence and excessive drinking are atypical. There are definite sociocultural determinants of drinking behavior such as ethnic group, parental drinking patterns, age, religion, and education. Drinking is prevalent on the college campus but until only recently there have been few alcohol abuse prevention efforts aimed at college students.

Alcohol education philosophies have evolved from evils of alcohol to subject matter to mental health approaches. It is now widely recognized that alcohol education must focus on attitudes as well as factual information so that students will develop responsible attitudes and behaviors toward alcohol. The ultimate goal of such education efforts is to reduce the incidence of negative consequences experienced as a result of drinking.

Unfortunately, there have been very few systematic evaluations of the effectiveness of alcohol education programs in modifying college students' drinking attitudes and behaviors. Those evaluations that have been conducted indicate that almost any strategy is effective in increasing knowledge but that this knowledge does not necessarily lead to a change in behavior. Evaluations of programs that have shown a significant attitude change indicate that the attitude change is not long lasting

and may or may not significantly affect drinking behavior. The existing data are inconclusive.

The literature on attitude change lends support to the ideas that peer facilitators can be persuasive communicators and that small group discussion can be an effective technique for shaping attitudes. The theory of cognitive dissonance supports the use of role playing strategies in which students are obligated to behave in a prescribed manner, thereby affecting their drinking related attitudes. Attitudes appear to be considerably affected by peoples' experiences.

Though some authorities have advocated incorporating an experiential approach into alcohol education programs very little has actually been done to carry out such strategies. There is virtually no evaluative evidence, other than the author's pilot study, addressing the effectiveness of such an approach in the literature.

The present study is an attempt to provide an objective evaluation of an innovative alcohol education program which may be implemented at other college campuses. The evaluation compares the effectiveness of two educational approaches, experiential and cognitive small group discussions, which have been described in this chapter. The results provide objective data that are presently lacking in the literature.

CHAPTER III

METHODOLOGY

This study was designed to investigate the relative effectiveness of two alcohol education approaches in modifying college students' drinking attitudes, knowledge, and behavioral consequences. The two approaches examined represent an experiential small group approach and a cognitive small group approach. Each was implemented within a lecture-discussion alcohol education course at the University of Florida. Each experimental group was evaluated against a control group.

The Research Hypotheses

The research hypotheses were first tested immediately upon completion of the course, then again three months later to determine which effects were immediate, delayed, or lasting over time. The following null hypotheses were tested:

- H₀1. There are no differences among groups in responsible-irresponsible attitudes toward drinking as a result of exposure to the experimental treatments.
- H₀2. There are no differences among groups in temperance-intemperance attitudes toward drinking as a result of exposure to the experimental treatments.
- H₀3. There are no differences among groups in knowledge about alcohol as a result of exposure to the experimental treatments.

- H₀4. There are no differences among groups in incidence of negative consequences of drinking as a result of exposure to the experimental treatments.
- H₀5. There are no differences among groups, according to sex, in responsible-irresponsible attitudes toward drinking as a result of exposure to the experimental treatments.
- H₀6. There are no differences among groups, according to sex, in temperance-intemperance attitudes toward drinking as a result of exposure to the experimental treatments.
- H₀7. There are no differences among groups, according to sex, in knowledge about alcohol as a result of exposure to the experimental treatments.
- H₀8. There are no differences among groups, according to sex, in incidences of negative consequences of drinking as a result of exposure to the experimental treatments.
- H₀9. There are no differences among groups, according to lower division (freshman and sophomore)--upper division (junior and senior) classification, in responsible-irresponsible attitudes toward drinking as a result of exposure to the experimental treatments.
- H₀10. There are no differences among groups, according to lower division-upper division classification, in temperance-intemperance attitudes toward drinking as a result of exposure to the experimental treatments.
- H₀11. There are no differences among groups, according to lower division-upper division classification, in knowledge about alcohol as a result of exposure to the experimental treatments.

- H₀12. There are no differences among groups, according to lower division-upper division classification, in incidence of negative consequences of drinking as a result of exposure to the experimental treatments.
- H₀13. There are no differences among subgroups in responsible-irresponsible attitudes toward drinking as a result of exposure to the experimental treatments.
- H₀14. There are no differences among subgroups in temperance-intemperance attitudes toward drinking as a result of exposure to the experimental treatments.
- H₀15. There are no differences among subgroups in knowledge about alcohol as a result of exposure to the experimental treatments.
- H₀16. There are no differences among subgroups in incidences of negative consequences of drinking as a result of exposure to the experimental treatments.

The Research Design

The design of the study is a multivariate quasi-experimental pre-test-posttest-post posttest nonequivalent control group design (Campbell & Stanley, 1963). This design provides good control for all threats to internal validity. The sample selection was not completely randomized because it was necessary to take subjects from intact class enrollments. The possible interaction of selection bias and treatment poses the only major threat to external validity. However, this effect may be minimal since most students reported taking the course for various reasons other

than a special interest in alcohol abuse; most reported needing a two-hour elective course or expecting an easy grade.

Neither the reactive effects of testing nor the experimental arrangements greatly jeopardize generalizability because the testing and treatments were conducted within the regular academic course framework. The experimental arrangements are not uncommon within the usual college academic atmosphere.

The research design may be graphically represented as follows:

Groups	Pretest	Treatment	Posttest	Post-Posttest
Experiential	O ₁	X ₁	O ₂	O ₃
Cognitive	O ₄	X ₂	O ₅	O ₆
Control	O ₇		O ₈	O ₉

Subjects

The experimental subjects in this study were male and female undergraduate students at the University of Florida who electively enrolled in the course, Responsible Alternatives to Alcohol Abuse (ASC 210). Since the course is open to undergraduates from all areas of study, the students who enrolled were a fair representation of the undergraduate student body. Maximum enrollment for the course was set at 140 students. For purposes of this study, to provide for expected experimental mortality, a minimum enrollment of 100 students was set as an acceptable initial sample size.

An initial enrollment of 133 students yielded 98 experimental subjects from whom posttest data were available. These students were randomly divided into the two treatment groups.

The experiential group contained 52 subjects: 28 males (53.8%) and 24 females (46.2%). Ages ranged from 18 to 24 with the mean age being 20.62. The subjects were predominately white (82.7%), the others being black (15.4%) and hispanic (1.9%). Seniors made up 46.2 percent of the group, followed by juniors (36.5%), sophomores (11.5%) and freshmen (5.8%).

The cognitive group contained 46 subjects: 26 males (56.5%) and 20 females (43.5%). Ages ranged from 17 to 29 with the mean age being 20.68. The subjects were mostly white (89.1%), the remainder being black. The breakdown according to class revealed 41.3 percent seniors, 19.6 percent juniors, 28.3 percent sophomores, and 8.7 percent freshmen. There was one graduate student.

The control group consisted of male and female undergraduate students who were randomly selected from two elective courses in the Department of Behavioral Sciences entitled Power and Violence (BES 253) and Human Sexuality (BES 252).

A minimum of 50 students was set as an acceptable initial enrollment for the two courses. The combined enrollment totalled 62 students yielding 46 usable cases. Of these, 25 (54.3%) were males and 21 (45.7%) were females. Ages ranged from 18 to 28, the mean age being 19.48. Ninety-four percent of the students were white, while 4 percent were

black and 2 percent were hispanic. Freshmen accounted for 44 percent of the class followed by sophomores (30%), juniors (15%), and seniors (11%).

Sampling Method

A cluster sampling technique was used whereby students were chosen from existing course enrollments; experimental subjects being then randomly assigned to either experimental group (Plutchik, 1968). Randomization was accomplished by assigning a number to each student and, using a table of random numbers, alternately assigning the students to ten discussion sections. Each discussion section was then randomly assigned to either experimental group by drawing section numbers from a common pool so that five sections became subgroups of the experiential group and five became subgroups of the cognitive groups.

The Course

The experimental course was a ten week undergraduate elective course in the College of Arts and Sciences entitled Responsible Alternatives to Alcohol Abuse (ASC 210). The course was conducted under a lecture-discussion format. Each student was required to attend an hour long plenary lecture session plus one of the ten small group sessions each week. The lectures were presented by guest speakers and covered a wide range of topics related to alcohol use and abuse. Two lecture sessions consisted of the presentation of highly informative films in lieu of a speaker. The course was designed to present as many sides as possible to various issues. The lectures were informal and student

questions, comments, and rebuttals were encouraged. The small group sessions immediately followed the lectures and provided the students with an opportunity to further discuss the lecture topic.

Each student was required to attend all class sessions, take a final examination based on lecture and assigned reading material, and prepare a written or oral project presentation showing evidence of an in-depth investigation of some aspect of alcohol use or abuse. A letter grade and two quarter hours of academic credit were awarded for successful completion of the course. Students not wishing to receive a letter grade utilized a pass-fail grade option.

A complete course syllabus and description of lectures are shown in Appendix A.

Procedure

Each experimental educational approach was implemented within the small groups by specially trained undergraduate peer facilitators. Two facilitators co-led each of the ten small groups. Two of the ten subgroups, one within each approach, was led by an advanced graduate student paired with a beginning undergraduate facilitator. In all other cases a beginning facilitator was paired with an undergraduate facilitator with previous experience in that position.

All subgroups within each approach followed the same schedule of activities for that approach, though not necessarily in the same week-by-week order.

The facilitators were undergraduate university students in good academic standing who, on the basis of a written application and a

personal interview, were deemed to be appropriate candidates.

Facilitators must have: (1) successfully completed ASC 210; (2) shown superior academic qualities and leadership potential, as evidenced by at least a 3.0 grade point average on a four-point scale, and participation in extracurricular activities; (3) shown a sincere interest in preventing alcohol abuse by their involvement both with the course and with BACCHUS, the student organization for the prevention of alcohol abuse; and (4) undergone at least six hours of intensive training on the fundamentals of peer group facilitation.

The primary training activity was a one-day workshop which focused on communication skills and group leadership based on the facilitative model of teaching (Wittmer & Myrick, 1974). The six-hour training session was conducted on the first Saturday after the beginning of the school term.

During the morning session split sessions were conducted so that returning facilitators would not have to repeat a previous training experience. The session for beginning facilitators was conducted by the author. Following some warm-up exercises designed to help facilitators get acquainted and to provide a model of small group techniques, there was a group discussion of the role of the facilitator and the learning process. Basic communication skills were practiced via a series of dyadic communication exercises. Group dynamics and leadership skills were addressed by way of group role playing.

The morning session for returning facilitators was conducted by the coordinator of the Alcohol Abuse Prevention Program. A group discussion format was used to cover the topics of alcohol abuse prevention, goals of alcohol education, and conducting alcohol education workshops.

For the afternoon session all facilitators were reunited and familiarized with the rationale and implementation strategies of each experimental approach. The remainder of the session was devoted to course logistics and planning. Agendas for each of the training sessions are shown in Appendix B.

Each facilitator received four quarter hours of academic credit for his or her participation by registering for ASC 496, an individual study course. The facilitators were required to attend two meetings per week for group supervision. Additional inservice training was provided by way of a site visit to a primary care center where facilitators had the opportunity to learn more about the problems of alcoholism.

Facilitators were evaluated subjectively by their performance in the small groups and objectively by their performances on two competency based examinations. The first examination covered the materials presented in the Peer Group Facilitator Manual (Rozelle & Gonzalez, Note 1). The second examination covered assigned reading material for ASC 210 and ASC 496. Facilitators who had previously completed one quarter of ASC 496 were tested on material presented in the book Learning About Alcohol (Miles, 1974).

All facilitators were directed to adhere to the ethical guidelines presented in the manual which were adapted from the American Psychological Association guidelines. Facilitators were closely supervised by the experimenter and the coordinator of the Alcohol Abuse Prevention Program.

Experiential Group

The experiential group consisted of five small subgroups of ten to 14 students. These subgroups were designated as activity groups centering

around several group activities addressing six major concepts associated with responsible attitudes and behavior toward alcohol. The activities were essentially experiential but also involved group discussion for planning and feedback. Some of the activities involved entering drinking establishments and participating in an alcohol awareness cocktail party where alcoholic beverages were consumed. Individual drinking, though, was strictly optional. In consideration of those students who may have had some moral or religious objections to participating in these activities, participation was optional. Those who did agree to participate were asked to sign an informed consent form in accordance with the guidelines of the University Committee for the Protection of Human Subjects. A copy of this form is shown in Appendix C. If a student had chosen not to participate he or she would have been given an alternative assignment covering the same concept. However, all students elected to participate in the experiential activities.

In accordance with ASC 210 course requirements, each student in the experiential group was required to complete an action project either individually or with a partner and to make an oral presentation of the findings in class during the last three weeks of the term. An action project could be a field study, survey, interview, experiment, or other such activity reflecting an experiential learning process.

A sample course outline for the activity groups is shown in Appendix D. The outlines for the five groups were identical but the order of activities was changed as necessary for logistical coordination.

The six concepts covered and the implementation strategies for each are described below:

1. Responsible Behavior Toward Alcohol: Drinking or not drinking in social settings so that problems resulting from drinking are minimized. Students acted out role play vignettes listed in Appendix E.
2. Responsibility in Vending: The alcoholic beverage vendor's role in encouraging or discouraging irresponsible drinking. Students visited local drinking establishments in subgroups of four or five and evaluated vendors on the basis of a preassigned checklist shown in Appendix F. Upon returning to the classroom the following week, students ranked and discussed all bars surveyed.
3. Responsible Hosting: The host's or hostess' role in ensuring that guests enjoy themselves without experiencing any negative consequences as a result of their drinking. Students planned and conducted a responsible drinking party based on guidelines shown in Appendix G.
4. Responsible Drinking: The drinker's role in drinking at a party without experiencing negative consequences. Students participated in a demonstration responsible drinking party. A bartending instructor was on hand to mix drinks and provide information about alcoholic content of the various beverages, which had been donated by a liquor distributing company. The University Police Department provided a breath analyzer so that those students who chose to drink could monitor their BAC. Students provided food, ice, soft drinks, and mixers.

5. Dealing with Alcohol Problems: The student's role in intervening to avoid alcohol related incidents or helping a fellow student, friend, or relative who may be abusing alcohol. Students acted out role play vignettes shown in Appendix H.
6. Alcoholism and Treatment: The problems of alcoholism and how they are treated. Students gained a deeper understanding by visiting an alcoholism treatment center (primary care center) and interacting with patients and treatment personnel.

All facilitators were instructed to limit all field activities to one hour to coincide with the time allotment for the cognitive group sessions.

Cognitive Group

The cognitive group also consisted of five small subgroups of ten to 14 students. These subgroups, designated as discussion groups, centered around group discussions of the six major concepts described above. Students were required to complete either written or action projects with oral class presentations. The course outline for the discussion groups is shown in Appendix I. A values clarification exercise in which students were asked to rank a series of drinking situations according to responsibility was used as an aid to discussion. This exercise is shown in Appendix J. A short film, Booze and Yous (Note 2) was used to enhance discussion of responsible drinking.

Criterion Instruments

Two criterion instruments were used to test the research hypotheses. The first consists of two attitude scales which concern an individual's tolerance for temperate and for intemperate use of alcohol by others. The second instrument contains one attitude scale, concerning an individual's feelings about his or her own responsible or irresponsible use of alcohol. Two other scales are contained in this instrument as well. These are a knowledge scale and a scale which measures negative consequences experienced as a result of drinking. A fourth section is included for collection of demographic data. Each instrument is described in detail below.

Attitudes About Drinking Questionnaire

This instrument (See Appendix K) was developed by Dr. A. F. Williams, Alcoholism Research Analyst, Division of Alcoholism, Massachusetts Department of Public Health (Williams, DiCicco, & Unterberger, 1968). There are two attitude scales, called Temperate use (TU) and Intemperate Use (IU). Both are Likert scales. "Temperate use" refers to the moderate use of alcohol in social contexts. "Intemperate use" refers to the excessive use of alcohol, or drinking for personal effects.

The TU scale is composed of 22 items; ten are positive statements about temperate use and 12 are negative. Examples of positive statements are "It is possible for alcohol to be used responsibly by people"; "There is nothing wrong with the custom of many families of having wine with meals"; "The social use of alcohol by millions of people gives them satisfaction to which they have a right." An example of a negative statement is "The use of alcohol as a beverage by anyone is immoral."

The IU scale is composed of 20 items; 11 are positive and nine are negative. Examples of positive statements are "It is okay to get tight or drunk as long as you are in your own home"; "Everyone should get drunk at least once." The negative statements represent a disapproval of intemperate use: "Drunkenness lowers the dignity of human beings."

The respondent may choose one of five possible responses to each item: strongly agree, agree, undecided, disagree, and strongly disagree. Responses are scored from four to zero for each item so that for the 22-item TU scale the range of scores is 88-0, a high score indicating approval of excessive use by oneself or others.

Reliability. Reliability of the two scales was established by testing a sample of high-school junior and senior boys and girls. The instrument was administered on two occasions three weeks apart. Test-retest reliability of the boys' scores was +.83 for TU and +.85 for IU (N=217).

Split-half reliability was determined by a split-half correlation analysis which yielded a coefficient alpha of +.91 for TU and +.93 for IU. All the reliability coefficients were satisfactorily high.

Validity. To validate the predictive ability of the scales the total sample was divided into three groups: abstainers, moderate drinkers, and excessive drinkers. It was predicted that excessive drinkers would score highest on IU, followed by moderates, then abstainers. A similar ranking was predicted for the TU scale. Both predictions were supported by the data at statistically significant levels.

The IU scale, but not the TU scale, can be used alone as a measure of the alcohol educational goal of discouraging tolerance for excessive

drinking. Excessive drinkers are most likely to score high on TU, but a high TU score is only desirable in combination with a low IU score. Thus, the best measure of responsible attitudes is a combined score obtained by subtracting the IU score from the TU score. A high combined score, reflecting a high TU and a low IU, is, then a highly desirable outcome of alcohol education. This combined score provides a measure of temperance-intemperance attitudes toward drinking.

The Student Drinking Questionnaire

The second instrument used to evaluate the research hypotheses is the Student Drinking Questionnaire (SDQ) shown in Appendix L. The SDQ was developed by G. M. Gonzalez, Coordinator of the Alcohol Abuse Prevention Program at the University of Florida. It was designed specifically to measure college students' attitudes about drinking, knowledge about alcohol, and negative consequences experienced as a result of drinking (Gonzalez, in press).

Attitude Scale. The attitude scale may also be referred to as the responsibility-irresponsibility scale. It consists of twenty statements that are associated with responsibility toward use of alcohol. Fifteen of the statements are positive statements representing responsible behavior; five are negative representing irresponsible behavior. Respondents are asked to indicate on a Likert scale the likelihood of their behaving in the manner described by each statement. Examples of positive statements are "provide food with alcohol at all times, especially proteins such as cheeses, meats, and fish"; "set limits on how many drinks you are going to have a night out or at a party."

Examples of negative statements are "gulp drinks for the rapid effect that drinking produces"; "drink alone from a desire to escape boredom or loneliness."

The respondent may choose any of five responses for each item: very likely, likely, somewhat likely, unlikely, or very unlikely. For scoring purposes the responses are weighted so that "very likely" is scored 5 and "very unlikely" is scored 1 on all items except the five negative statements which are inversely weighted. The range of scores for this 20-item scale is 100-20; the higher score being indicative of greater responsibility.

Knowledge Scale. The knowledge scale consists of 30 factual statements about alcohol to which the respondent may answer true, false, or don't know. The range of scores is 30-0. Examples of the true-false statements are "Alcohol is usually classified as a stimulant"; "Drinking coffee or taking a cold shower is an effective way of sobering up."

Negative Consequences Scale. The third and final scale consists of 20 items which describe specific negative consequences that are sometimes experienced as a result of drinking. Respondents are asked to indicate how many times during the last three months they experienced each consequence. Examples of these consequences are: "Have had a hangover"; "Have cut a class after having several drinks"; "Were involved in some type of accident after drinking."

Response choices are: Never; 1 Time, 2 Times, 3 Times; 4 Times; 5 Times or More. Responses for each item are assigned a value of 0 for "Never" to 5 for "5 Times or More"; yielding a theoretical range of scores from 0 to 100 for the 20-item scale.

Items on this scale and on the knowledge scale were adopted from the Student Alcohol Questionnaire (Engs, 1977b).

Reliability. Reliability of the three scales of the SDQ was determined through the evaluation of a random sample of 499 college students from six Southern colleges and universities. Split-half reliability was established by using a Spearman-Brown analysis which yielded reliability coefficients of +.79 for the responsibility scale; +.73 for the knowledge scale; and +.91 for the consequences scale.

Test-retest reliability was established using a sample of 68 University of Florida students. The SDQ was administered on two occasions two months apart. Reliability coefficients obtained in this manner were: +.78 for the responsibility scale; and +.71 for the knowledge scale. All the reliability coefficients were satisfactorily high.

Validity. Content validity for the attitude scale, which is easily the most abstract of the scales, was established by asking a panel of experts to rate the items. There was unanimous agreement that the scale would adequately measure responsible attitudes.

To further validate both the responsibility and the negative consequences scales, Gonzalez tested the null hypothesis that "There is no significant inverse relationship between the responsibility scale and the negative behavioral consequences scale." The hypothesis was tested on the basis of the sample of 499 Southern college students. The analysis yielded a Pearson Product-Moment correlation of $r = -.52$ between the two scales representing a significant inverse relationship ($p < .001$). The null hypothesis was rejected establishing the construct validity of the scales.

Data Collection

Pretest scores were obtained by administering the Attitudes About Drinking questionnaire during the first scheduled meetings of the experimental and control classes. The SDQ was administered by the researcher at the beginning of the initial lecture session which consisted of a film containing factual information that would otherwise bias the pretest results on the knowledge scale. Since the initial film was essentially a facts only presentation it was not expected to noticeably influence attitudes. Therefore, because of time limitations, the second questionnaire was administered by the facilitators during the initial meetings of the small groups. Both instruments were given simultaneously to the control subjects.

In all cases the students were informed that the questionnaires were to be used for research purposes only, that honest, accurate responses were essential, and that individual anonymity would be maintained. No names were requested on the instruments but for purposes of identifying and matching the questionnaires each student was asked to write the last four digits of his or her social security number on each questionnaire.

The posttests were administered in a similar manner during the last scheduled class meeting of each group. The collected questionnaires were then paired with pretests according to the respondents' numbers. Unmatched questionnaires were deleted from the study.

The post-posttests were administered three months after completion of the course via mailed questionnaires which were sent to addresses

previously obtained from all subjects and recorded on note cards. Missing addresses were obtained from university records. Each pair of questionnaires was accompanied by a cover letter explaining the purpose of the tests, the assurance of confidentiality, and the importance of replying promptly. A monetary incentive of 25 cents was attached to the cover letter to encourage cooperation. A self-addressed stamped envelope was also included for ease of response. The first mailing cover letter is shown in Appendix H.

After two weeks a second set of questionnaires with an accompanying cover letter (Appendix N) and return envelope was mailed to each student on the mailing list from whom a completed questionnaire had not yet been received. These individuals were identified for mailing by means of a checklist of social security numbers. After two weeks those questionnaires not received were treated as missing cases and deleted from the final analysis.

A 70 percent return rate was set as the minimum acceptable response for follow-up analysis. The post-posttest return rate was 74.3 percent.

From the 133 students originally enrolled in the experimental course 117 pretests were collected. Matching posttests were obtained from 103 students. Because the study was concerned with modifying drinking students' behavior, the data from nondrinkers were deleted from the analysis. There were five nondrinkers; leaving 98 usable experimental cases, 54 in the experiential group and 46 in the cognitive group. Post-posttest returns for these groups included 38 experiential (73%) and 34 cognitive (74%) group subjects.

From the 62 students originally enrolled in the control courses 55 pretests were collected. Matching posttests were obtained from 50 students. Four nondrinkers were deleted leaving 46 usable cases. Post-posttests were obtained from 35 (76 percent) of the control subjects.

Analysis of the Data

The data were analyzed via an analysis of covariance using pretest scores as covariates to statistically control for the main effects of initial group differences. Pretest, posttest, and post-posttest questionnaires were matched according to numbers so that each matched set could be treated as one case with repeated measures. The effect of treatment on each dependent variable was separately analyzed for posttest and for post-posttest comparisons. An alpha level of .05 was regarded as an acceptable level of significance.

In cases where significant F - ratios were found a post hoc multiple comparison test was performed to determine the source of variation. Tukey's HSD procedure was used for this purpose.

Limitations of the Study

The results of this study are necessarily limited in generalizability to college students voluntarily receiving alcohol education via a course of study covering a period of several weeks. As with any self-report assessments individual responses on the questionnaires may be biased somewhat because of subjects' tendencies to respond in a socially desirable manner (Scott, 1968).

There are several other limitations to consider in terms of the applicability of the follow-up results. Over a period of three months

individual history differences may represent a threat to internal validity. Another threat to the validity of the study results from the fact that the three-month follow-up period occurred during the summer months, a time when many students are not in school. One might expect a natural change in drinking behavior under these circumstances. Furthermore, since the course lasted only twelve weeks and the negative consequences scale asks for reported behavior over a three month period, there is a possibility that in responding on the posttest students may have reported drinking behavior only for the ten week period since the pretest or may have reported some drinking behavior occurring in the two weeks prior to pretesting.

It should be pointed out that because of the sampling technique that was necessary because of working with pre-existing class enrollments equivalence of experimental and control groups was not possible. The groups were not equivalent in regard to age and class. There was a preponderance of juniors and seniors in the experimental group while the control group contained primarily freshmen and sophomores. This may not be a major limitation in view of the Jessor and Jessor (1975) study, which revealed that most students have already decided to drink by the time they reach college, and the Hanson (1974) study which showed that freshmen now drink nearly as much as the upperclassmen. This limitation was further minimized by the use of an analysis of covariance to statistically control for initial group differences (Campbell & Stanley, 1963).

A final point is that the drinking behavior examined in this study was self-reported drinking behavior subject to guessing and deliberate alteration. No other means of monitoring students' drinking behavior were attempted.

CHAPTER IV

RESULTS

This study was designed to evaluate the effects of two educational approaches, experiential and cognitive, as implemented within an alcohol education course, on college students' drinking attitudes, knowledge, and behavior. The question that was addressed was whether or not such a course would increase the level of responsibility in attitudes toward alcohol use, increase tolerance for temperate use while decreasing tolerance for intemperate use, increase knowledge about alcohol, and decrease the incidences of negative consequences experienced as a result of drinking. The latter is the most critical and most elusive to alcohol abuse prevention efforts.

A total of 144 students participated in the study, 52 in the experiential group, 46 in the cognitive group, and 46 in the control group. A total of 107 students participated in the three-month follow-up study. Of these, 38 were in the experiential group, 34 were in the cognitive group, and 35 were in the control group.

There were four dependent variables examined. Responsible-irresponsible attitudes were represented by an individual's mean score on the responsibility scale of the Student Drinking Questionnaire (SDQ). A responsible attitude is indicated by a high score on this scale. Temperate-intemperate attitudes were measured by an individual's combined score on the Attitudes About Drinking questionnaire which was computed by subtracting the total score on the Intemperate Use Scale from the total score on the Temperate

Use Scale. A high combined score is a desirable outcome of alcohol education. Knowledge about alcohol was measured by an individual's total number of correct responses on the knowledge scale of the SDQ. Incidences of negative consequences of drinking were represented by an individual's sum score on the negative consequences scale of the SDQ. These scores represent self-reported drinking behavior only.

An analysis of covariance was performed to determine if the three groups were significantly different on posttest and on three-month posttest measures of the above variables. An alpha level of .05 was set as the basis for rejection of the null hypothesis, providing a 95 percent confidence interval for the results obtained. A Tukey's Honestly Significant Difference (HSD) post hoc test was performed to determine the source of significant variation.

The hypotheses were tested first immediately upon the completion of the course, then again three months later to determine if observed effects were immediate, delayed, or lasting over three months. The remainder of this chapter provides a detailed description of the results of the testing of each hypothesis. It should be noted that the numbers appearing in the tables have been rounded to the second decimal place.

Hypothesis 1

There are no differences among groups in responsible-irresponsible attitudes toward drinking as a result of exposure to the experimental treatments.

As shown in Table 1 both the experiential and the cognitive groups scored significantly ($p < .001$) higher than the control group on the

Table 1

Analysis of Covariance of Posttest Scores Adjusted for Pretest Scores of Responsible-Irresponsible Attitudes Among Experiential, Cognitive, and Control Groups with Tukey's HSD Comparisons Among Means

<u>Source</u>	<u>SS</u>	<u>DF</u>	<u>MS</u>	<u>F</u>
Pretest	16.32	1	16.32	93.96*
Main Effects	5.97	2	2.99	17.19*
Error	24.31	140	0.17	
Total	46.60	143	0.33	

<u>N</u>	<u>Group</u>		Experiential	Cognitive	Control
		<u>Mean</u>	3.90	3.83	3.43
52	Experiential	3.90	-	.07	.47*
46	Cognitive	3.83		-	.40*
46	Control	3.43			-

Note. Grand Mean = 3.73

* $p < .001$

responsibility scales immediately after completion of the course.

Thus the null hypothesis was rejected for the immediate effects of treatment.

An examination of Table 2 reveals a significant (.001 level) F - ratio for the main effects of treatment three months after the completion of the course. Thus null Hypothesis 1 was also rejected for the effects of treatment three months after completion of the course. The means for the experiential, cognitive, and control groups were 3.90, 3.83, and 3.43, respectively.

Table 2

Analysis of Covariance of Post-Posttest Scores Adjusted for Pretest Scores of Responsible-Irresponsible Attitudes Among Experiential, Cognitive, and Control Groups with Tukey's HSD Comparisons Among Means

<u>Source</u>	<u>SS</u>	<u>DF</u>	<u>MS</u>	<u>F</u>
Pretest	6.16	1	6.16	40.09**
Main Effects	4.78	2	2.39	15.56**
Error	15.84	103	0.15	
Total	26.78	106	0.25	

<u>N</u>	<u>Group</u>		Experiential	Cognitive	Control
		<u>Mean</u>	4.15	3.95	3.64
38	Experiential	4.15	-	.20	.51**
34	Cognitive	3.95		-	.31*
35	Control	3.64			-

Note. Grand Mean = 3.92

* $p < .01$

** $p < .001$

Hypothesis 2

There are no differences among groups in temperance-intemperance attitudes toward drinking as a result of exposure to the experimental treatments.

It can be seen in Table 3 that there were no significant differences among groups on the temperance-intemperance scale on posttest measures immediately upon completion of the course. Therefore, the null hypothesis of no immediate treatment effects was retained.

Table 3

Analysis of Covariance of Posttest Scores Adjusted for Pretest Scores
of Temperance-Intemperance Attitudes Among Experiential,
Cognitive, and Control Groups

<u>Source</u>	<u>SS</u>	<u>DF</u>	<u>MS</u>	<u>F</u>
Pretest	5527.34	1	5527.34	59.43*
Main Effects	325.53	2	162.77	1.75
Error	13021.36	140	93.01	
Total	18874.22	143	131.99	

<u>Group</u>	<u>N</u>	<u>Adjusted Means</u>
Experiential	52	26.19
Cognitive	46	26.42
Control	46	23.07

Note. Grand Mean = 25.27

* $p < .001$

Similarly, there were no significant differences among groups on the temperance-intemperance scale when measured three months after completion of the course (See Table 4). The null Hypothesis 2 for post-posttest measures was retained.

Table 4

Analysis of Covariance of Post-Posttest Scores Adjusted for Pretest
Scores of Temperance-Intemperance Attitudes Among
Experiential, Cognitive, and Control Groups

<u>Source</u>	<u>SS</u>	<u>DF</u>	<u>MS</u>	<u>F</u>
Pretest	5362.49	1	5362.49	70.81*
Main Effects	48.53	2	24.26	0.32
Error	7801.16	103	75.74	
Total	13212.18	106	124.64	

<u>Group</u>	<u>N</u>	<u>Adjusted Means</u>
Experiential	38	29.95
Cognitive	34	29.14
Control	35	28.32

Note. Grand Mean = 29.16

* $p < .001$

Hypothesis 3

There are no differences among groups in knowledge about alcohol as a result of exposure to the experimental treatments.

As shown in Table 5 both the experiential and the cognitive groups were significantly ($p < .001$) different from the control group in knowledge about alcohol immediately upon completion of the course. Thus the null hypothesis was rejected.

Table 5

Analysis of Covariance of Posttest Scores Adjusted for Pretest Scores of Knowledge About Alcohol Among Experiential, Cognitive, and Control Groups with Tukey's HSD Comparisons Among Means

<u>Source</u>	<u>SS</u>	<u>DF</u>	<u>MS</u>	<u>F</u>
Pretest	588.16	1	588.16	46.57*
Main Effects	459.78	2	229.89	18.20*
Error	1768.04	140	12.63	
Total	2815.98	143	19.69	

<u>N</u>	<u>Group</u>		Experiential	Cognitive	Control
		<u>Means</u>	<u>21.58</u>	<u>21.63</u>	<u>17.77</u>
52	Experiential	21.58	-	.05	3.81*
46	Cognitive	21.63		-	3.86*
46	Control	17.77			-

Note. Grand Mean = 20.38

* $p < .001$

The three month follow-up analysis, as can be seen in Table 6, indicated that the immediate observed differences still held at the .001 level. Both experiential and cognitive groups showed a higher level of knowledge about alcohol as a result of the course. Thus the null hypothesis was again rejected on the basis of post-posttest results.

Table 6

Analysis of Covariance of Post-Posttest Scores Adjusted for Pretest Scores of Knowledge About Alcohol Among Experiential, Cognitive, and Control Groups with Tukey's HSD Comparisons Among Means

<u>Source</u>	<u>SS</u>	<u>DF</u>	<u>MS</u>	<u>F</u>
Pretest	321.89	1	321.89	28.40*
Main Effects	482.71	2	241.35	21.29*
Error	1167.58	103	11.34	
Total	1972.18	106	18.61	

<u>N</u>	<u>Group</u>		Experiential	Cognitive	Control
		<u>Mean</u>	21.74	21.73	17.19
38	Experiential	21.74	-	.01	4.55*
34	Cognitive	21.73		-	4.54*
35	Control	17.19			-

Note. Grand Mean = 20.25

* $p < .001$

Hypothesis 4

There are no differences among groups in incidences of negative consequences of drinking as a result of exposure to the experimental treatments.

An examination of Table 7 shows that when subjects were tested immediately upon completion of the course, no significant differences were found among groups in the incidences of negative consequences experienced as a result of drinking. Thus the null hypothesis was retained.

Table 7

Analysis of Covariance of Posttest Scores Adjusted for Pretest Scores
of Incidences of Negative Consequences Among Experiential,
Cognitive, and Control Groups

<u>Source</u>	<u>SS</u>	<u>DF</u>	<u>MS</u>	<u>F</u>
Pretest	7679.99	1	7679.99	137.40*
Main Effects	70.42	2	35.21	0.63
Error	7825.36	140	55.90	
Total	15575.78	143	108.92	

<u>Group</u>	<u>N</u>	<u>Adjusted Means</u>
Experiential	52	9.44
Cognitive	46	10.22
Control	46	11.16

Note. Grand Mean = 10.24

* $p < .001$

However, when the follow-up measures were taken three months later a significant reduction in negative consequences was evident for the experiential group ($p < .01$) and the cognitive group ($p < .05$) in comparison with the control group. Therefore, Hypothesis 4, which was retained on the basis of the initial effects of treatments, was rejected after post-posttest analysis, indicating a delayed effect of treatment on self-reported drinking behaviors.

Table 8

Analysis of Covariance of Post-Posttest Scores Adjusted for Pretest Scores of Incidences of Negative Consequences Among Experiential, Cognitive, and Control Groups with Tukey's HSD Comparisons Among Means

<u>Source</u>	<u>SS</u>	<u>DF</u>	<u>MS</u>	<u>F</u>
Pretest	3010.99	1	3010.99	58.40***
Main Effects	607.86	2	303.93	5.90**
Error	5310.75	103	51.56	
Total	8929.60	106	84.24	

<u>N</u>	<u>Group</u>	<u>Mean</u>	Experiential	Cognitive	Control
			6.69	7.53	12.20
38	Experiential	6.69	-	.84	5.51**
34	Cognitive	7.53		-	4.67*
35	Control	12.20			-

Note. Grand Mean = 8.76

* $p < .05$

** $p < .01$

*** $p < .001$

Hypothesis 5

There are no differences among groups, according to sex, in responsible-irresponsible attitudes toward drinking as a result of exposure to the experimental treatments.

This hypothesis was tested first for all male subjects, then for all female subjects. As shown in Table 9, male students in both the experiential and the cognitive group scored significantly ($p < .01$) higher

on the responsibility scale than did males in the control group. The data reported in Table 10 indicate that the same differences held for the female students. Thus the hypothesis of no differences among groups for males and for females was rejected on the basis of posttests administered immediately after completion of the course.

Table 9

Analysis of Covariance of Posttest Scores Adjusted for Pretest Scores of Males' Responsible-Irresponsible Attitudes Among Experiential, Cognitive, and Control Groups with Tukey's HSD Comparisons Among Means

<u>Source</u>	<u>SS</u>	<u>DF</u>	<u>MS</u>	<u>F</u>
Pretest	8.27	1	8.28	37.90**
Main Effects	2.98	2	1.49	6.83*
Error	16.37	75	0.22	
Total	27.62	78	0.35	

<u>N</u>	<u>Group</u>		Experiential	Cognitive	Control
		<u>Mean</u>	3.79	3.66	3.31
28	Experiential	3.79	-	.13	.48*
26	Cognitive	3.66		-	.35*
25	Control	3.31			-

Note. Grand Mean = 3.59

* $p < .01$

* $p < .001$

Table 10

Analysis of Covariance of Posttest Scores Adjusted for Pretest Scores of Females' Responsible-Irresponsible Attitudes Among Experiential, Cognitive, and Control Groups with Tukey's HSD Comparisons Among Means

<u>Source</u>	<u>SS</u>	<u>DF</u>	<u>MS</u>	<u>F</u>
Pretest	5.01	1	5.01	40.80*
Main Effects	3.04	2	1.52	12.37*
Error	7.49	61	0.12	
Total	15.53	64	0.24	

<u>N</u>	<u>Group</u>		Experiential	Cognitive	Control
		<u>Mean</u>	4.06	4.04	3.59
24	Experiential	4.06	-	.02	.47*
20	Cognitive	4.04		-	.45*
21	Control	3.59			-

Note. Grand Mean = 3.9

* $p < .001$

Similarly, the three-month follow-up analysis showed both males (See Table 11) and females (See Table 12) producing significant ($p < .001$) differences among groups on the responsibility scale. Thus, the null hypothesis was again rejected indicating an immediate and lasting effect of treatment on responsible-irresponsible attitudes toward drinking.

Post-posttest means for males on the responsibility scale were experiential, 4.16, cognitive, 3.92, and control, 3.55. The means for females were 4.15, 4.02, and 3.74, respectively.

Table 11

Analysis of Covariance of Post-Posttest Scores Adjusted for Pretest Scores of Males' Responsible-Irresponsible Attitudes Among Experiential, Cognitive, and Control Groups with Tukey's HSD Comparisons Among Means

<u>Source</u>	<u>SS</u>	<u>DF</u>	<u>MS</u>	<u>F</u>
Pretest	1.85	1	1.85	9.98**
Main Effects	3.30	2	1.65	8.89**
Error	9.08	49	0.19	
Total	14.23	52	0.27	

<u>N</u>	<u>Group</u>	<u>Mean</u>	Experiential	Cognitive	Control
			4.16	3.92	3.55
17	Experiential	4.16	-	.24	.61**
18	Cognitive	3.92		-	.37*
18	Control	3.55			-

Note. Grand Mean = 3.87

* $p < .05$

** $p < .001$

Table 12

Analysis of Covariance of Post-Posttest Scores Adjusted for Pretest Scores of Females' Responsible-Irresponsible Attitudes Among Experiential, Cognitive, and Control Groups with Tukey's HSD Comparisons Among Means

<u>Source</u>	<u>SS</u>	<u>DF</u>	<u>MS</u>	<u>F</u>
Pretest	4.35	1	4.35	34.67***
Main Effects	1.60	2	0.80	6.35**
Error	6.27	50	0.13	
Total	12.21	53	0.23	

<u>N</u>	<u>Group</u>		Experiential	Cognitive	Control
		<u>Mean</u>	4.15	4.02	3.74
21	Experiential	4.15	-	.13	.41**
16	Cognitive	4.02		-	.28*
17	Control	3.74			-

Note. Grand Mean = 3.98

* $p < .05$

** $p < .01$

*** $p < .001$

Hypothesis 6

There are no differences among groups, according to sex, in temperance-intemperance attitudes toward drinking as a result of exposure to the experimental treatments.

An inspection of Table 13 indicates that there were no significant differences among groups for males on the temperance-intemperance scale

when measured immediately following the course. This was not the case, however, for females (Table 14) who produced significantly higher scores for the experiential and the cognitive group than for the control group at the .01 level. Thus the null hypothesis was retained for males but was rejected for females when tested immediately upon the conclusion of the treatment.

Table 13

Analysis of Covariance of Posttest Scores Adjusted for Pretest Scores of Males' Temperance-Intemperance Attitudes Among Experiential, Cognitive, and Control Groups

<u>Source</u>	<u>SS</u>	<u>DF</u>	<u>MS</u>	<u>F</u>
Pretest	2115.73	1	2115.73	20.63*
Main Effects	3.26	2	1.63	0.02
Error	7691.09	75	102.55	
Total	9810.07	78	125.77	

<u>Group</u>	<u>N</u>	<u>Adjusted Means</u>
Experiential	28	22.54
Cognitive	26	22.96
Control	25	22.96

Note. Grand Mean = 22.81

* $p < .001$

Table 14

Analysis of Covariance of Posttest Scores Adjusted for Pretest Scores of Females' Temperance-Intemperance Attitudes Among Experiential, Cognitive, and Control Groups with Tukey's HSD Comparisons Among Means

<u>Source</u>	<u>SS</u>	<u>DF</u>	<u>MS</u>	<u>F</u>
Pretest	2620.15	1	2620.15	34.55**
Main Effects	758.47	2	379.24	5.00*
Error	4625.86	61	75.83	
Total	8004.48	64	125.07	

<u>N</u>	<u>Group</u>		Experiential	Cognitive	Control
		<u>Mean</u>	30.42	30.86	23.31
24	Experiential	30.42	-	.44	7.11*
20	Cognitive	30.86		-	7.55*
21	Control	23.31			-

Note. Grand Mean = 28.26

* $p < .01$

** $p < .001$

A three month follow-up analysis failed to produce any significant differences among groups on the temperance-intemperance scale for both males (Table 15) and for females (Table 16). Based on the post-posttest results the null hypothesis was retained.

Table 15

Analysis of Covariance of Post-Posttest Scores of Males' Temperance-Intemperance Attitudes Among Experiential, Cognitive, and Control Groups

<u>Source</u>	<u>SS</u>	<u>DF</u>	<u>MS</u>	<u>F</u>
Pretest	2536.27	1	2536.27	32.69*
Main Effects	97.32	2	48.66	0.63
Error	3801.70	49	77.59	
Total	6435.29	52	123.76	

<u>Group</u>	<u>N</u>	<u>Adjusted Means</u>
Experiential	17	27.40
Cognitive	18	25.06
Control	18	28.24

Note. Grand Mean = 26.89

* $p < .001$

Table 16

Analysis of Covariance of Post-Posttest Scores Adjusted for Pretest Scores of Females' Temperance-Intemperance Attitudes Among Experiential, Cognitive, and Control Groups

<u>Source</u>	<u>SS</u>	<u>DF</u>	<u>MS</u>	<u>F</u>
Pretest	2311.90	1	2311.90	31.48*
Main Effects	250.56	2	125.28	1.71
Error	3672.34	50	75.45	
Total	6234.80	53	117.63	

<u>Group</u>	<u>N</u>	<u>Adjusted Means</u>
Experiential	21	32.31
Cognitive	16	33.50
Control	17	28.26

Note. Grand Mean = 31.39

* $p < .001$

Hypothesis 7

There are no differences among groups, according to sex, in knowledge about alcohol as a result of exposure to the experiential treatments.

It can be seen in Table 17 that on posttest measures of knowledge about alcohol, male students in the experiential and cognitive groups scored significantly ($p < .05$) higher than the control group. Females in both the experiential and the cognitive groups displayed a significantly higher ($p < .001$) level of knowledge than females in the control group (Table 18). Hypothesis 7 was rejected.

Table 17

Analysis of Covariance of Posttest Scores Adjusted for Pretest Scores of Males' Knowledge About Alcohol Among Experiential, Cognitive, and Control Groups with Tukey's HSD Comparisons Among Means

<u>Source</u>		<u>SS</u>	<u>DF</u>	<u>MS</u>	<u>F</u>
Pretest		460.54	1	460.54	32.18**
Main Effects		107.77	2	53.89	3.77*
Error		1073.45	75	14.31	
Total		1641.77	78	21.05	
<u>N</u>	<u>Group</u>		Experiential	Cognitive	Control
		<u>Mean</u>	21.05	21.23	18.63
28	Experiential	21.05	-	.18	2.42*
26	Cognitive	21.23		-	2.60*
25	Control	18.63			-

Note. Grand Mean = 20.34

* $p < .05$

** $p < .001$

Table 18

Analysis of Covariance of Posttest Scores Adjusted for Pretest Scores of Females' Knowledge About Alcohol Among Experiential, Cognitive, and Control Groups with Tukey's HSD Comparisons Among Means

<u>Source</u>	<u>SS</u>	<u>DF</u>	<u>MS</u>	<u>F</u>
Pretest	183.91	1	183.91	20.21*
Main Effects	434.86	2	217.43	23.89*
Error	555.17	61	9.10	
Total	1173.93	64	18.34	

<u>N</u>	<u>Group</u>		Experiential	Cognitive	Control
		<u>Mean</u>	22.23	22.21	16.67
24	Experiential	22.23	-	.02	5.56*
20	Cognitive	22.21			5.54*
21	Control	16.67			-

Note. Grand Mean = 20.43

* $p < .001$

The three month follow-up analysis yielded similar results for males and females on the knowledge scale. Males in both the experiential and cognitive groups scored significantly higher ($p < .01$) than males in the control group (Table 19).

Females in both the experiential and cognitive groups scored significantly higher than females in the control group at the .001 level (Table 20). As with the immediate posttest the null hypothesis was rejected for the three-month posttest.

Table 19

Analysis of Covariance of Post-Posttest Scores Adjusted for Pretest Scores of Males' Knowledge About Alcohol Among Experiential, Cognitive, and Control Groups with Tukey's HSD Comparisons Among Means

<u>Source</u>	<u>SS</u>	<u>DF</u>	<u>MS</u>	<u>F</u>
Pretest	151.83	1	151.83	14.73**
Main Effects	116.06	2	58.03	5.63*
Error	504.93	49	10.31	
Total	772.83	52	14.86	

<u>N</u>	<u>Group</u>		Experiential	Cognitive	Control
		<u>Mean</u>	<u>21.12</u>	<u>21.12</u>	<u>17.99</u>
17	Experiential	21.12	-	0.0	3.13*
18	Cognitive	21.12		-	3.13*
18	Control	17.99			

Note. Grand Mean = 20.06

* $p < .01$

** $p < .001$

Table 20

Analysis of Covariance of Post-Posttest Scores Adjusted for Pretest Scores of Females' Knowledge About Alcohol Among Experiential, Cognitive, and Control Groups with Tukey's HSD Comparisons Among Means

<u>Source</u>	<u>SS</u>	<u>DF</u>	<u>MS</u>	<u>F</u>
Pretest	214.03	1	214.03	18.25*
Main Effects	394.98	2	197.49	16.84*
Error	586.33	50	11.73	
Total	1195.33	53	22.55	

<u>N</u>	<u>Group</u>		<u>Experiential</u>	<u>Cognitive</u>	<u>Control</u>
		<u>Mean</u>	22.48	22.14	16.41
21	Experiential	22.48	-	.33	6.07*
16	Cognitive	22.15		-	5.74*
17	Control	16.41			

Note. Grand Mean = 20.44

* $p < .001$

Hypothesis 8

There are no differences among groups, according to sex, in incidences of negative consequences of drinking as a result of exposure to the experimental treatments.

Posttest analysis of negative consequences of drinking revealed that there were no significant differences among groups for males (Table 21) and for females (Table 22). Therefore, for the immediate effects of treatment, the null hypothesis was retained.

Table 21

Analysis of Covariance of Posttest Scores Adjusted for Pretest Scores
of Males' Incidences of Negative Consequences Among
Experiential, Cognitive, and Control Groups

<u>Source</u>	<u>SS</u>	<u>DF</u>	<u>MS</u>	<u>F</u>
Pretest	4013.49	1	4013.49	52.51*
Main Effects	41.00	2	20.50	0.27
Error	5732.35	75	76.43	
Total	9786.84	78	125.47	

<u>Group</u>	<u>N</u>	<u>Adjusted Means</u>
Experiential	28	11.75
Cognitive	26	11.73
Control	25	13.35

Note. Grand Mean = 12.25

* $p < .001$

Table 22

Analysis of Covariance of Posttest Scores Adjusted for Pretest Scores
of Females' Incidences of Negative Consequences Among
Experiential, Cognitive, and Control Groups

<u>Source</u>	<u>SS</u>	<u>DF</u>	<u>MS</u>	<u>F</u>
Pretest	3229.59	1	3229.59	107.68*
Main Effects	17.78	2	8.89	0.29
Error	1829.57	61	29.99	
Total	5076.94	64	79.33	

<u>Group</u>	<u>N</u>	<u>Adjusted Means</u>
Experiential	24	7.10
Cognitive	20	8.13
Control	21	8.23

Note. Grand Mean = 7.78

* $p < .001$

An examination of Table 23 indicates that when incidences of negative consequences were re-examined three months after completion of the course a significantly ($p < .05$) lower level of negative consequences was reported by the males in the experiential group than the control males. However, no significant differences were found between males in the cognitive and control groups. It can be seen in Table 24 that for females both the experiential and cognitive groups reported a significantly ($p < .05$) lower level of negative consequences than the control group. Based on the above results the null hypothesis of no treatment effects three months after completion of the course was rejected.

Table 23

Analysis of Covariance of Post-Posttest Scores Adjusted for Pretest Scores of Males' Incidences of Negative Consequences Among Experiential, Cognitive, and Control Groups with Tukey's HSD Comparisons Among Means

<u>Source</u>		<u>SS</u>	<u>DF</u>	<u>MS</u>	<u>F</u>
Pretest		993.77	1	993.77	19.91**
Main Effects		336.42	2	168.21	3.37*
Error		2445.72	49	49.91	
Total		3775.92	52	72.61	

<u>N</u>	<u>Group</u>		Experiential	Cognitive	Control
		<u>Mean</u>	6.41	7.94	12.63
17	Experiential	6.41	-	1.53	6.22*
18	Cognitive	7.94		-	4.69
18	Control	12.63			-

Note. Grand Mean = 9.04

* $p < .05$

** $p < .001$

Table 24

Analysis of Covariance of Post-Posttest Scores Adjusted for Pretest Scores of Females' Incidences of Negative Consequences Among Experiential, Cognitive, and Control Groups with Tukey's HSD Comparisons Among Means

<u>Source</u>	<u>SS</u>	<u>DF</u>	<u>MS</u>	<u>F</u>
Pretest	2884.01	1	2884.01	72.41**
Main Effects	269.85	2	134.93	3.39*
Error	1991.59	50	39.83	
Total	5145.46	53	97.08	

<u>N</u>	<u>Group</u>		Experiential	Cognitive	Control
		<u>Mean</u>	7.35	6.48	11.76
21	Experiential	7.35	-	.87	4.41*
16	Cognitive	6.48		-	5.28*
17	Control	11.76			-

Note. Grand Mean = 8.48

* $p < .05$

** $p < .001$

Hypothesis 9

There are no differences among groups, according to lower division-upper division classification, in responsible-irresponsible attitudes toward drinking as a result of exposure to the experimental treatments.

As shown in Table 25 for those students classified as lower division (freshmen and sophomores) the experiential group scored significantly ($p < .001$) higher in responsibility than the control group when tested

immediately upon completion of the course. There was no significant difference between the cognitive and the control groups. However, for upper division (juniors and seniors) students, both the experiential and the cognitive groups scored equally higher than the control group at the .05 level (Table 26). Thus, the null hypothesis was rejected based on immediate posttests.

Table 25

Analysis of Covariance of Posttest Scores Adjusted for Pretest Scores of Lower Division Students' Responsible-Irresponsible Attitudes Among Experiential, Cognitive, and Control Groups with Tukey's HSD Comparisons Among Means

<u>Source</u>	<u>SS</u>	<u>DF</u>	<u>MS</u>	<u>F</u>
Pretest	11.57	1	11.57	84.67*
Main Effects	2.04	2	1.02	7.47*
Error	7.65	56	0.14	
Total	21.26	59	0.36	

<u>N</u>	<u>Group</u>		Experiential	Cognitive	Control
		<u>Mean</u>	3.95	3.66	3.43
9	Experiential	3.95	-	.29	.52*
17	Cognitive	3.66		-	.23
34	Control	3.43			-

Note. Grand Mean = 3.57

* $p < .001$

Table 26

Analysis of Covariance of Posttest Scores Adjusted for Pretest Scores of Upper Division Students' Responsible-Irresponsible Attitudes Among Experiential, Cognitive, and Control Groups with Tukey's HSD Comparisons Among Means

<u>Source</u>	<u>SS</u>	<u>DF</u>	<u>MS</u>	<u>F</u>
Pretest	5.44	1	5.44	28.50**
Main Effects	1.67	2	0.83	4.36*
Error	15.09	79	0.19	
Total	22.20	82	0.27	

<u>N</u>	<u>Group</u>		Experiential	Cognitive	Control
		<u>Mean</u>	3.90	3.90	3.49
43	Experiential	3.90	-	0.0	.41*
28	Cognitive	3.90		-	.41*
12	Control	3.49			-

Note. Grand Mean = 3.84

* $p < .05$

** $p < .001$

As shown in Table 27, when tested three months after completion of the course, lower division students in the experiential group scored significantly higher ($p < .01$) than those in the control and cognitive groups. There was no significant difference between the cognitive and control groups. The three-month follow-up analysis for upper division students

(Table 28) showed that again the experiential group scored significantly higher on the responsibility scale at the .01 level. However, whereas there was no difference between lower division cognitive and control groups, for upper division students the cognitive group scored significantly higher than the control group at the .05 level. Therefore, the null hypothesis of no differences among groups three months after completion of the course was rejected.

Table 27

Analysis of Covariance of Post-Posttest Scores Adjusted for Pretest Scores of Lower Division Students' Responsible-Irresponsible Attitudes Among Experiential, Cognitive, and Control Groups with Tukey's HSD Comparisons Among Means

<u>Source</u>	<u>SS</u>	<u>DF</u>	<u>MS</u>	<u>F</u>
Pretest	4.25	1	4.25	29.46**
Main Effects	2.11	2	1.05	7.30*
Error	5.19	36	0.14	
Total	11.55	39	0.30	

<u>N</u>	<u>Group</u>		<u>Experiential</u>	<u>Cognitive</u>	<u>Control</u>
		<u>Mean</u>	4.43	3.79	3.64
4	Experiential	4.43	-	.64*	.79*
11	Cognitive	3.79		-	.15
25	Control	3.64			-

Note. Grand Mean = 3.76

* $p < .01$

** $p < .001$

Table 28

Analysis of Covariance of Post-Posttest Scores Adjusted for Pretest Scores of Upper Division Students' Responsible-Irresponsible Attitudes Among Experiential, Cognitive, and Control Groups with Tukey's HSD Comparisons Among Means

Source	SS	DF	MS	F
Pretest	2.16	1	2.16	13.92***
Main Effects	1.57	2	0.78	5.06**
Error	9.61	62	0.16	
Total	13.33	65	0.21	

N	Group	Mean	Experiential	Cognitive	Control
			4.13	4.01	3.67
34	Experiential	4.13	-	.12	.46**
22	Cognitive	4.01		-	.34*
10	Control	3.67			-

Note. Grand Mean = 4.02

* $p < .05$

** $p < .01$

*** $p < .001$

Hypothesis 10

There are no differences among groups, according to lower division-upper division classification, in temperance-intemperance attitudes toward drinking as a result of exposure to the experimental treatments.

An examination of Tables 29 and 30 reveals that when measured immediately after completion of the course there were no significant differences among groups for either the lower division or the upper division students respectively. Therefore, the null hypothesis for immediate treatment effects was retained.

Table 29

Analysis of Covariance of Posttest Scores Adjusted for Pretest Scores of Lower Division Students' Temperance-Intemperance Attitudes Among Experiential, Cognitive, and Control Groups

<u>Source</u>	<u>SS</u>	<u>DF</u>	<u>MS</u>	<u>F</u>
Pretest	1807.25	1	1807.25	23.08*
Main Effects	233.53	2	116.76	1.49
Error	4384.57	56	78.30	
Total	6425.35	59	108.90	

<u>Group</u>	<u>N</u>	<u>Adjusted Means</u>
Experiential	9	21.28
Cognitive	17	25.36
Control	34	20.69

Note. Grand Mean = 22.10

* $p < .001$

Table 30

Analysis of Covariance of Posttest Scores Adjusted for Pretest Scores of Upper Division Students' Temperance-Intemperance Attitudes Among Experiential, Cognitive, and Control Groups

<u>Source</u>	<u>SS</u>	<u>DF</u>	<u>MS</u>	<u>F</u>
Pretest	3172.18	1	3172.18	31.38*
Main Effects	11.05	2	5.52	0.06
Error	7987.31	79	101.11	
Total	11170.54	82	136.23	

<u>Group</u>	<u>N</u>	<u>Adjusted Means</u>
Experiential	43	27.87
Cognitive	28	27.86
Control	12	26.83

Note. Grand Mean = 27.72

* $p < .001$

Similar results were found when the three-month follow-up post-tests were administered. There were no significant differences among groups for lower division students (Table 31) and for upper division students (Table 32). The null hypothesis was retained for the three-month follow-up analysis.

Table 31

Analysis of Covariance of Post-Posttest Scores Adjusted for Pretest Scores of Lower Division Students' Temperance-Intemperance Attitudes Among Experiential, Cognitive, and Control Groups

<u>Source</u>	<u>SS</u>	<u>DF</u>	<u>MS</u>	<u>F</u>
Pretest	1006.83	1	1006.83	15.95*
Main Effects	317.96	2	158.98	2.52
Error	2272.19	36	63.12	
Total	3596.97	39	92.23	

<u>Group</u>	<u>N</u>	<u>Adjusted Means</u>
Experiential	4	35.70
Cognitive	11	26.17
Control	25	26.00

Note. Grand Mean = 27.02

* $p < .001$

Table 32

Analysis of Covariance of Post-Posttest Scores Adjusted for Pretest Scores of Upper Division Students' Temperance-Intemperance Attitudes Among Experiential, Cognitive, and Control Groups

<u>Source</u>	<u>SS</u>	<u>DF</u>	<u>MS</u>	<u>F</u>
Pretest	4277.04	1	4277.04	53.68*
Main Effects	49.71	2	24.85	0.31
Error	4941.56	62	79.70	
Total	9268.31	65	142.59	

<u>Group</u>	<u>N</u>	<u>Adjusted Means</u>
Experiential	34	29.76
Cognitive	22	31.08
Control	10	32.06

Note. Grand Mean = 30.55

* $p < .001$

Hypothesis 11

There are no differences among groups, according to lower division-upper division classification, in knowledge about alcohol as a result of exposure to the experimental treatments.

As shown in Table 33 posttest measures of knowledge about alcohol for lower division students found the cognitive group scoring significantly higher than the control group at the .05 level. There was no significant difference between the experiential and the control group. However, for the upper division students both the cognitive and the experiential

groups scored significantly higher than the control group at the .001 level (Table 34). Therefore, the null hypothesis of no immediate treatment effects was rejected on the basis of the difference between the cognitive group and the control group.

Table 33

Analysis of Covariance of Posttest Scores Adjusted for Pretest Scores of Lower Division Students' Knowledge About Alcohol Among Experiential, Cognitive, and Control Groups with Tukey's HSD Comparisons Among Means

<u>Source</u>	<u>SS</u>	<u>DF</u>	<u>MS</u>	<u>F</u>
Pretest	281.05	1	281.05	15.29**
Main Effects	160.05	2	80.02	4.35*
Error	1029.63	56	18.39	
Total	1470.73	59	24.93	

<u>N</u>	<u>Group</u>		Experiential	Cognitive	Control
		<u>Mean</u>	19.04	21.00	17.23
9	Experiential	19.04	-	1.96	1.71
17	Cognitive	21.00		-	3.77*
34	Control	17.23			-

Note. Grand Mean = 18.57

*p < .05

**p < .001

Table 34

Analysis of Covariance of Posttest Scores Adjusted for Pretest Scores of Upper Division Students' Knowledge About Alcohol Among Experiential, Cognitive, and Control Groups with Tukey's HSD Comparison Among Means

<u>Source</u>	<u>SS</u>	<u>DF</u>	<u>MS</u>	<u>F</u>
Pretest	179.54	1	179.54	22.59*
Main Effects	166.39	2	83.19	10.47*
Error	627.76	79	7.95	
Total	973.68	82	11.87	

<u>N</u>	<u>Group</u>		Experiential	Cognitive	Control
		<u>Mean</u>	22.32	22.36	18.30
43	Experiential	22.32	-	.04	4.02*
28	Cognitive	22.36		-	4.06*
12	Control	18.30			-

Note. Grand Mean = 21.75

* $p < .001$

As shown in Table 35, the three-month follow-up analysis found lower division students scoring significantly higher in the experiential group ($p < .01$) and the cognitive group ($p < .05$) than in the control group. An analysis of scores of upper division students indicated that

both the experiential and the cognitive groups scored significantly ($p < .01$) higher than the control group on the knowledge scale three months after completion of the course (Table 36). Therefore the null hypothesis was rejected.

Table 35

Analysis of Covariance of Post-Posttest Scores Adjusted for Pretest Scores of Lower Division Students' Knowledge About Alcohol Among Experiential, Cognitive, and Control Groups with Tukey's HSD Comparisons Among Means

<u>Source</u>	<u>SS</u>	<u>DF</u>	<u>MS</u>	<u>F</u>
Pretest	82.21	1	82.21	5.93*
Main Effects	183.32	2	91.66	6.61**
Error	499.44	36	13.87	
Total	764.97	39	19.62	

<u>N</u>	<u>Group</u>		Experiential	Cognitive	Control
		<u>Mean</u>	<u>22.37</u>	<u>19.72</u>	<u>16.18</u>
4	Experiential	22.37	-	2.65	6.19**
11	Cognitive	19.72		-	3.54*
25	Control	16.18			-

Note. Grand Mean = 17.77

* $p < .05$

** $p < .01$

Table 36

Analysis of Covariance of Post-Posttest Scores Adjusted for Pretest Scores of Upper Division Students' Knowledge About Alcohol Among Experiential, Cognitive, and Control Groups with Tukey's HSD Comparisons Among Means

<u>Source</u>	<u>SS</u>	<u>DF</u>	<u>MS</u>	<u>F</u>
Pretest	75.04	1	75.04	7.76*
Main Effects	140.31	2	70.15	7.26*
Error	599.27	62	9.67	
Total	814.62	65	12.53	

<u>N</u>	<u>Group</u>		<u>Experiential</u>	<u>Cognitive</u>	<u>Control</u>
		<u>Mean</u>	21.94	22.92	18.45
34	Experiential	21.94	-	.98	3.49*
22	Cognitive	22.92		-	4.47*
10	Control	18.45			-

Note. Grand Mean = 21.74

* $p < .01$

Hypothesis 12

There are no differences among groups according to lower division-upper division classification, in incidences of negative consequences of drinking as a result of exposure to the experimental treatments.

A posttest analysis of incidences of negative consequences experienced as a result of drinking produced no significant differences among groups for lower division students and for upper division students. These results are shown in Tables 37 and 38 respectively. The null hypothesis of no immediate treatment effects was therefore retained.

Table 37

Analysis of Covariance of Posttest Scores Adjusted for Pretest Scores of Lower Division Students' Incidences of Negative Consequences Among Experiential, Cognitive, and Control Groups

<u>Source</u>	<u>SS</u>	<u>DF</u>	<u>MS</u>	<u>F</u>
Pretest	4294.40	1	4294.40	114.66*
Main Effects	122.19	2	122.19	1.63
Error	2097.38	56	2097.38	
Total	6513.97	59	6513.97	

<u>Group</u>	<u>N</u>	<u>Adjusted Means</u>
Experiential	9	9.51
Cognitive	17	9.21
Control	34	12.29

Note. Grand Mean = 11.00

* $p < .001$

Table 38

Analysis of Covariance of Posttest Scores Adjusted for Pretest Scores of Upper Division Students' Incidences of Negative Consequences Among Experiential, Cognitive, and Control Groups

<u>Source</u>	<u>SS</u>	<u>DF</u>	<u>MS</u>	<u>F</u>
Pretest	3563.17	1	3562.17	52.94*
Main Effects	61.66	2	30.83	0.46
Error	5317.19	79	67.31	
Total	8942.01	82	109.05	

<u>Group</u>	<u>N</u>	<u>Adjusted Means</u>
Experiential	43	9.37
Cognitive	28	10.83
Control	12	8.59

Note. Grand Mean = 9.78

* $p < .001$

The three-month follow-up analysis showed that the lower division students reported experiencing significantly ($p < .01$) fewer negative consequences in the experiential group than in the control group. The cognitive group was not significantly different from the control group (See Table 39). There were no significant differences among groups for upper division students (Table 40). In view of the significantly lower incidence of negative consequences experienced by the lower division students in the experiential group three months after completion of the course, the null hypothesis was rejected.

Table 39

Analysis of Covariance of Post-Posttest Scores Adjusted for Pretest Scores of Lower Division Students' Incidences of Negative Consequences Among Experiential, Cognitive, and Control Groups with Tukey's HSD Comparisons Among Means

<u>Source</u>	<u>SS</u>	<u>DF</u>	<u>MS</u>	<u>F</u>
Pretest	1582.06	1	1582.06	30.66**
Main Effects	609.76	2	304.88	5.91*
Error	1857.56	36	51.60	
Total	4049.37	39	103.83	

<u>N</u>	<u>Group</u>		Experiential	Cognitive	Control
		<u>Mean</u>	1.60	5.62	12.68
4	Experiential	1.60	-	4.02	11.08*
11	Cognitive	5.62		-	7.06
25	Control	12.68			-

Note. Grand Mean = 9.63

* $p < .01$

** $p < .001$

Table 40

Analysis of Covariance of Post-Posttest Scores Adjusted for Pretest Scores of Upper Division Students' Incidences of Negative Consequences Among Experiential, Cognitive, and Control Groups with Tukey's HSD Comparisons Among Means

<u>Source</u>	<u>SS</u>	<u>DF</u>	<u>MS</u>	<u>F</u>
Pretest	1517.25	1	1517.25	30.66*
Main Effects	178.16	2	89.08	1.80
Error	3067.85	62	49.48	
Total	4763.25	65	73.28	

<u>Group</u>	<u>N</u>	<u>Adjusted Means</u>
Experiential	34	7.22
Cognitive	22	8.29
Control	10	12.08

Note. Grand Mean = 8.36

* $p < .001$

Hypothesis 13

There are no differences among subgroups in responsible-irresponsible attitudes toward drinking as a result of exposure to the experimental treatments.

An inspection of Table 41 and Table 42 reveals that there were no significant differences among subgroups within the experiential and cognitive treatment groups for posttest and for post-posttest measures on the responsibility scale. Therefore, the null hypothesis was retained for both immediate and three-month measures.

Table 41

Analysis of Covariance of Posttest Scores Adjusted for Pretest Scores
of Responsible-Irresponsible Attitudes Among Experimental Subgroups

<u>Source</u>	<u>SS</u>	<u>DF</u>	<u>MS</u>	<u>F</u>
Pretest	9.94	1	9.94	45.34*
Main Effects	1.55	9	0.17	0.78
Error	19.07	87	0.22	
Total	30.55	97	0.32	

<u>Group</u>	<u>Subgroup</u>	<u>N</u>	<u>Adjusted Means</u>
Experiential	1	11	3.78
	2	12	3.98
	3	10	3.83
	4	11	3.88
	5	8	3.90
Cognitive	6	10	3.94
	7	11	3.57
	8	9	3.98
	9	5	3.91
	10	11	3.71

Note. Grand Mean = 3.84

* $p < .001$

Table 42

Analysis of Covariance of Post-Posttest Scores Adjusted for Pretest
Scores of Responsible-Irresponsible Attitudes Among Experimental
Subgroups

<u>Source</u>	<u>SS</u>	<u>DF</u>	<u>MS</u>	<u>F</u>
Pretest	3.36	1	3.36	18.44*
Main Effects	1.67	9	0.19	1.02
Error	11.11	61	0.18	
Total	16.14	71	0.23	

<u>Group</u>	<u>Subgroup</u>	<u>N</u>	<u>Adjusted Means</u>
Experiential	1	7	4.03
	2	9	4.08
	3	8	4.01
	4	9	4.34
	5	5	4.23
Cognitive	6	7	3.87
	7	7	3.88
	8	7	4.09
	9	5	3.89
	10	8	3.90

Note. Grand Mean = 4.04

* $p < .001$

Hypothesis 14

There are no differences among subgroups in temperance-intemperance attitudes toward drinking as a result of exposure to the experimental treatments.

As shown in Table 43, there were no significant differences among experimental subgroups in temperance-intemperance attitudes immediately upon completion of the course. An examination of Table 44 indicates that there were also no significant differences among subgroups when measured three months after completion of the course. Therefore, the null hypothesis was retained.

Table 43

Analysis of Covariance of Posttest Scores Adjusted for Pretest Scores of Temperance-Intemperance Attitudes Among Experimental Subgroups

<u>Source</u>	<u>SS</u>	<u>DF</u>	<u>MS</u>	<u>F</u>
Pretest	3628.90	1	3628.90	35.13*
Main Effects	1540.54	9	171.17	1.66
Error	8988.27	87	103.31	
Total	14157.72	97	145.96	

<u>Group</u>	<u>Subgroup</u>	<u>N</u>	<u>Adjusted Means</u>
Experiential	1	11	24.27
	2	12	27.17
	3	10	26.49
	4	11	22.25
	5	8	30.84
Cognitive	6	10	28.52
	7	11	22.05
	8	9	33.25
	9	5	30.32
	10	11	20.37

Note. Grand Mean = 26.04

* $p < .001$

Table 44

Analysis of Covariance of Post-Posttest Scores Adjusted for Pretest
Scores of Temperance-Intemperance Attitudes Among Experimental
Subgroups

<u>Source</u>	<u>SS</u>	<u>DF</u>	<u>MS</u>	<u>F</u>
Pretest	4033.26	1	4033.26	47.41*
Main Effects	558.63	9	62.07	0.73
Error	5189.93	61	85.08	
Total	9781.82	71	137.77	

<u>Group</u>	<u>Subgroup</u>	<u>N</u>	<u>Adjusted Means</u>
Experiential	1	7	32.02
	2	9	30.13
	3	8	27.07
	4	9	29.51
	5	5	31.79
Cognitive	6	7	33.67
	7	7	22.90
	8	7	27.47
	9	5	30.51
	10	8	30.48

Note. Grand Mean = 29.46

* $p < .001$

Hypothesis 15

There are no differences among subgroups in knowledge about alcohol as a result of exposure to the experimental treatments.

The analysis of the immediate posttest data produced no significant differences among subgroups on the knowledge scale (Table 45). Likewise, there were no significant differences among subgroups when measured three months later (Table 46). Therefore, the null hypothesis was retained.

Table 45

Analysis of Covariance of Posttest Scores Adjusted for Pretest Scores of Knowledge About Alcohol Among Experimental Subgroups

<u>Source</u>	<u>SS</u>	<u>DF</u>	<u>MS</u>	<u>F</u>
Pretest	304.58	1	304.58	21.85*
Main Effects	247.03	9	27.45	1.97
Error	1212.59	87	13.94	
Total	1764.20	97	18.19	

<u>Group</u>	<u>Subgroup</u>	<u>N</u>	<u>Adjusted Means</u>
Experiential	1	11	21.80
	2	12	23.16
	3	10	19.78
	4	11	21.26
	5	8	21.93
Cognitive	6	10	22.92
	7	11	22.99
	8	9	22.68
	9	5	22.22
	10	11	18.14

Note. Grand Mean = 21.65

* $p < .001$

Table 46

Analysis of Covariance of Post-Posttest Scores Adjusted for Pretest
Scores of Knowledge About Alcohol Among Experimental Subgroups

<u>Source</u>	<u>SS</u>	<u>DF</u>	<u>MS</u>	<u>F</u>
Pretest	136.47	1	136.47	11.19*
Main Effects	85.27	9	9.47	0.78
Error	744.26	61	12.20	
Total	965.99	71	13.61	

<u>Group</u>	<u>Subgroup</u>	<u>N</u>	<u>Adjusted Means</u>
Experiential	1	7	22.26
	2	9	23.75
	3	8	20.48
	4	9	21.26
	5	5	21.01
Cognitive	6	7	22.85
	7	7	22.31
	8	7	22.20
	9	5	21.74
	10	8	20.22

Note. Grand Mean = 21.83

* $p < .001$

Hypothesis 16

There are no differences among subgroups in incidences of negative consequences of drinking as a result of exposure to the experimental treatments.

As indicated in Table 47 there were no significant differences among experimental subgroups in reported incidences of negative consequences of drinking when measured immediately upon completion of the course. These findings held when the post-posttest data were collected three months later. There were no differences among subgroups (Table 48). Therefore, the null hypothesis was retained.

Table 47

Analysis of Covariance of Posttest Scores Adjusted for Pretest Scores of Incidences of Negative Consequences Among Experimental Subgroups

<u>Source</u>	<u>SS</u>	<u>DF</u>	<u>MS</u>	<u>F</u>
Pretest	5021.00	1	5021.00	75.76*
Main Effects	321.43	9	35.71	0.54
Error	5765.95	87	66.28	
Total	11108.39	97	114.52	

<u>Group</u>	<u>Subgroup</u>	<u>N</u>	<u>Adjusted Mean</u>
Experiential	1	11	11.06
	2	12	8.89
	3	10	11.00
	4	11	10.59
	5	8	10.92
Cognitive	6	10	14.92
	7	11	9.85
	8	9	8.24
	9	5	13.52
	10	11	10.53

Note. Grand Mean = 10.79

* $p < .001$

Table 48

Analysis of Covariance of Post-Posttest Scores Adjusted for Pretest Scores of Incidences of Negative Consequences Among Experimental Subgroups

<u>Source</u>	<u>SS</u>	<u>DF</u>	<u>MS</u>	<u>F</u>
Pretest	1564.97	1	1564.97	39.53*
Main Effects	466.84	9	51.87	1.31
Error	2414.78	61	39.59	
Total	4446.59	71	62.63	

<u>Group</u>	<u>Subgroup</u>	<u>N</u>	<u>Adjusted Mean</u>
Experiential	1	7	9.28
	2	9	8.40
	3	8	7.77
	4	9	5.14
	5	5	6.40
Cognitive	6	7	9.06
	7	7	6.78
	8	7	3.23
	9	5	13.23
	10	8	10.66

Note. Grand Mean = 7.86

* $p < .001$

CHAPTER V

CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS

Summary

The study investigated the relative effectiveness of two curriculum approaches to alcohol education in modifying college students' attitudes about drinking, knowledge about alcohol, and negative consequences experienced as a result of drinking. The two approaches were an experiential small group approach and a cognitive small group approach. Each approach was implemented within a ten-week undergraduate alcohol education course at the University of Florida using a lecture-discussion format.

The experiential approach was an innovative approach developed by the author to enable students to actually experience and practice desirable behaviors related to alcohol use rather than to merely talk or read about such behaviors. Such activities as role playing confronting a problem drinker, planning and conducting a responsible cocktail party, and visiting an alcoholism treatment center were experienced by students within this approach.

The cognitive approach consisted of in-classroom activities such as values clarification exercises, a short film, guest speakers, and small group discussions. All cognitive group activities were designed to cover the same basic concepts related to responsible behavior toward alcohol covered by the experiential group.

Students enrolling in the course were randomly assigned to one of ten discussion groups. Each discussion group was led by a pair of specially trained peer facilitators. Five discussion groups employed the experiential approach and five the cognitive approach.

The experiential and cognitive experimental groups were then compared to a control group on the basis of posttests administered immediately upon completion of the course and then again three months later. The dependent variables investigated were responsible-irresponsible attitudes about drinking, temperance-intemperance attitudes about drinking, knowledge about alcohol, and negative consequences experienced as a result of drinking. The variables were measured by subjects' responses on the corresponding scales of the Student Drinking Questionnaire and the Attitudes About Drinking Questionnaire.

Differences in each of the above variables among groups were analyzed via an analysis of covariance using pretest scores as covariates. The analyses were performed on data collected immediately upon completion of the course and on follow-up data collected three months later. Differences were also examined on the basis of sex and academic classification, lower division students (freshmen and sophomores) and upper division students (juniors and seniors).

The following is a summary of results obtained from the study:

1. Significantly higher levels of responsible attitudes about drinking were found in the experiential ($p < .001$) and the cognitive ($p < .001$) groups than in the control group immediately after treatment.
2. Significantly higher levels of responsible attitudes about drinking were found in the experiential ($p < .001$) and the cognitive ($p < .01$) groups than in the control group three months after treatment.

3. No significant differences in temperance-intemperance attitudes were found among groups immediately after treatment or three months after treatment.
4. Significantly higher levels of knowledge about alcohol were found in the experiential group ($p < .001$) and the cognitive group ($p < .001$) than in the control group immediately after treatment.
5. Significantly higher levels of knowledge about alcohol were found in the experiential group ($p < .001$) and in the cognitive group ($p < .001$) than in the control group three months after treatment.
6. No significant differences in negative consequences of drinking were found among groups immediately after treatment.
7. Significantly fewer incidences of negative consequences of drinking were found in the experiential group ($p < .01$) and in the cognitive group ($p < .05$) than in the control group three months after treatment.
8. Significantly higher levels of responsible attitudes toward drinking were found for males in the experiential group ($p < .01$) and in the cognitive group ($p < .01$) than in the control group immediately after treatment.
9. Significantly higher levels of responsible attitudes toward drinking were found for females in the experiential group ($p < .001$) and in the cognitive group ($p < .001$) than in the control group immediately after treatment.
10. Significantly higher levels of responsible attitudes toward drinking were found for males in the experiential group ($p < .001$) and in the cognitive group ($p < .05$) than in the control group three months after treatment.
11. Significantly higher levels of responsible attitudes toward drinking were found for females in the experiential group ($p < .01$) and in the cognitive group ($p < .05$) than in the control group three months after treatment.
12. No significant differences in temperance-intemperance attitudes were found for males among groups immediately after treatment and three months after treatment.
13. Significantly higher levels of temperance-intemperance attitudes toward drinking were found for females in both experimental groups than in the control group immediately after treatment ($p < .01$).

14. No significant differences in temperance-intemperance attitudes were found among groups for females three months after treatment.
15. Significantly higher levels of knowledge about alcohol were found in both experimental groups for males ($p < .05$) and for females ($p < .001$) immediately after treatment.
16. Significantly higher levels of knowledge about alcohol were found in both experimental groups for males ($p < .05$) and for females ($p < .001$) three months after treatment.
17. No significant differences in negative consequences of drinking were found among groups for both males and for females immediately after treatment.
18. Significantly fewer incidences of negative consequences of drinking were found for males in the experiential group than in the control group ($p < .05$) and for females in both experimental groups than in the control group ($p < .05$) three months after treatment.
19. Significantly higher levels of responsible attitudes toward drinking were found for lower division students in the experiential group than in the control group ($p < .001$) immediately after treatment and significantly higher levels were found in the experiential group than in both the cognitive and the control groups ($p < .01$) three months after treatment.
20. Significantly higher levels of responsible attitudes were found for upper division students in both experimental groups than in the control group ($p < .05$) immediately after treatment.
21. Significantly higher levels of responsible attitudes were found for upper division students in the experiential group ($p < .01$) and in the cognitive group ($p < .05$) than in the control group three months after treatment.
22. No significant differences in temperance-intemperance attitudes were found among groups according to lower division-upper division classification immediately after treatment and three months after treatment.
23. Significantly higher levels of knowledge about alcohol were found for lower division students in the cognitive group than in the control group ($p < .05$) immediately after treatment.
24. Significantly higher levels of knowledge about alcohol were found for lower division students in the experiential group ($p < .01$) and in the cognitive group ($p < .05$) than in the control group three months after treatment.

25. Significantly higher levels of knowledge about alcohol were found for upper division students in both experimental groups than in the control group ($p < .001$) immediately after treatment and three months after treatment.
26. No significant differences in negative consequences of drinking were found among groups for both lower division and upper division students immediately after treatment and for upper division students three months after treatment.
27. Significantly fewer incidences of negative consequences of drinking were found for lower division students in the experiential group than in the control group ($p < .01$) three months after treatment.
28. No significant differences in responsible-irresponsible attitudes, temperance-intemperance attitudes, knowledge about alcohol, and negative consequences of drinking were found among subgroups immediately after treatment and three months after treatment.

Discussion

Immediately after completion of the course both experimental groups scored significantly higher than the control group in responsible attitudes toward drinking and knowledge about alcohol. These findings were not surprising in view of previous similar research (Rozelle & Gonzalez, in press; Gonzalez, Note 3). However, for alcohol abuse prevention efforts to be considered effective their effect on actual drinking behavior must be considered. Typically, in alcohol education efforts it has been assumed that if desirable changes in attitudes and knowledge are produced, then desirable changes in drinking behavior will follow. Evaluative research, though, has consistently failed to validate this assumption.

The present study apparently is no exception when one examines the immediate effects of treatment on reported incidences of negative

consequences experienced as a result of drinking. No significant differences among groups were found.

A follow-up analysis of data collected three months after completion of the course revealed that the increased level of responsible attitudes and knowledge about alcohol seen earlier in both experimental groups proved to be a lasting effect. However, there now appeared to be a delayed effect on behavior. The experiential group and the cognitive group both demonstrated a significant reduction in negative consequences when compared to the control group.

There are several possible explanations for the discrepancy between immediate posttest results and follow-up posttest results on the negative consequences scale.

The negative consequences scale calls for self-reports of drinking behavior during the previous three months. The length of time between administration of pretests and posttests was necessarily ten weeks, the length of the course. Therefore, students responding to the posttest may have reported behavior which occurred during the two-week overlap period before the course began.

A second explanation is that because drinking behavior as a rule does not occur all day every day, it cannot possibly be changed immediately, whereas attitudes and knowledge conceivably can. For changes in drinking behavior to occur, the drinker must have ample opportunity to experience drinking situations in which he can check his newly acquired attitudes and knowledge against his actual drinking behavior and make appropriate modifications. Therefore, the acquisition of responsible attitudes and knowledge about alcohol are necessary and sufficient precursors to behavior change. But it takes time for

newly acquired attitudes to become internalized and for newly acquired knowledge to be applied to affect drinking behavior.

Still another explanation which gains credence in view of the post-posttest results for the experiential group is that for behavior change to occur the desired behaviors must be experienced, practiced and reinforced by the absence of negative consequences. Many such experiences were provided within the experiential group throughout the course. Therefore, behavior may have begun to change by the end of the course but would not necessarily be revealed in immediate posttest reports of behavior changes but would surface in follow-up reports after a three month period.

Another finding of note is the absence of significant differences among groups on the temperance-intemperance attitude scale. Although purported as a reliable measure of desirable attitudes about drinking, the findings for this scale were not at all consistent with the findings on the other scales. The only exception was the significantly higher scores produced by females immediately after treatment. There are several possible explanations for this discrepancy.

The instrument, Attitudes About Drinking, was developed over ten years ago. Many of the expressions and terms such as "tight," "plowed," and "stoned" which were used in the wording of the items are not currently in the common drinking vernacular of college students. Additionally, the questionnaire was developed for use with high school age students. Many of the items were not relevant for the older college students. Comments written on the completed questionnaires revealed that the instrument was perceived by many to be vague and irrelevant. In short,

the Attitudes Toward Drinking questionnaire was not as appropriate for the study as was the Student Drinking Questionnaire.

For the most part, the findings were consistent for both sexes and for both grade level classifications. However, females and lower division students, who typically have lower drinking rates than males and upper division students, appeared to be the most responsive to the experimental treatments.

An interesting finding of the study is seen in a comparison of experiential and cognitive group means. Although in nearly all cases there were no significant differences between the two experimental groups, the experiential group consistently scored higher in responsible attitudes and lower in negative consequences than the cognitive group. The two groups were consistently nearly equal in knowledge about alcohol.

Student course evaluations collected at the end of the course revealed that the experiential approach was well received. Many suggested that additional field experiences be included or that all groups should be experiential. The approach not only provides students with opportunities to practice desirable behaviors which, as has been shown, most effectively influence attitudes and behavior; but it also is a very informative and meaningful method of learning.

A final finding that warrants comment is the absence of significant differences on all variables among subgroups within the two experimental approaches. This finding essentially means that the observed differences between the experiential and cognitive groups were not due to differences in facilitators.

Conclusions

1. The experiential approach and the cognitive approach both produced significant increases in level of responsible attitudes. The effects were immediate and lasting over a period of three months.
2. Neither experimental approach produced a significant change in temperance-intemperance attitudes either immediately or three months after treatment. However, females showed an immediate increase in temperant attitudes immediately after treatment but the effect did not last for three months.
3. The experiential group and the cognitive group produced significant increases in knowledge about alcohol. The effects were immediate and lasting over three months.
4. The experiential group and the cognitive group each produced a significant reduction in negative consequences experienced as a result of drinking. The effects were delayed, appearing only at the three month follow-up.
5. The experiential group consistently displayed higher means of level of responsible attitudes and lower means of incidences of negative consequences. These differences, however, were not statistically significant. Both approaches were effective in producing increased levels of knowledge.
6. The treatment effects were not sex specific nor grade level specific although there was a trend in the data for more significant changes to have occurred for females and for lower division students.

Implications

The findings of the study present several implications for alcohol abuse prevention workers, educators, and student personnel administrators on college and university campuses:

1. Whereas short-term workshops or didactic presentations lasting a few hours or days have failed to produce significant effects on drinking behavior, a long term effort, such as a ten-week course, can produce desirable changes in students' drinking behavior. The course format provides sufficient time between each treatment (class) session for students to assimilate new ideas, internalize new attitudes, and check and modify their drinking behaviors. A lecture-discussion format provides an efficient vehicle for presenting factual information while stimulating the sharing of ideas, the self-examination of drinking attitudes and behavior and the learning of material which is relevant and meaningful to the individual.
2. Alcohol education efforts should devote sufficient time of exposure to treatment and sufficient intervals between treatments for learning and behavior change to take place. The vehicle of implementation may be a course, an extended workshop; a several-session residence hall, fraternity, or sorority program; or an ongoing series of awareness activities aimed at specific target groups. Programs which rely on one-shot efforts to change drinking behavior may fall far short of the goal. The author does not wish to imply that short-term efforts should be abandoned, for they can be

effective in enhancing awareness and initiating self-examination. The point is that drinking behavior which has been developing for several years and/or is being socially reinforced in a high-rate-of-drinking community cannot be changed very quickly or easily.

3. A course on alcohol abuse which offers academic credit can be an excellent vehicle of implementation. When credit is given there is an added incentive for students to become involved, take the subject seriously and learn. Students who may be interested in learning about alcohol but are embarrassed to attend a workshop or pick up pamphlets on alcohol abuse can take a course on alcohol abuse without professing a particular need, problem, or interest in the subject. The development, implementation, and success of such a course on a college or university campus would require the cooperation of faculty and administration and a firm institutional commitment to the problem of alcohol abuse.
4. The content of alcohol education efforts is of supreme importance. For most students the question of whether or not to drink has already been answered by the time they reach college. Now they are learning how to drink or not drink in a drinking environment. Alcohol education should focus on helping students make responsible decisions about their own behavior regarding alcohol. The author has identified six basic concepts which should be addressed in a long-term alcohol education effort. These are summarized below.

- a. Since there is no concensus in America today as to what constitutes responsible drinking norms the concept of responsible behavior toward alcohol should be explored by students on . personal, communal, and societal levels. Opportunities should be provided for students to discuss and to role play responsible behaviors in various drinking situations.
- b. Since a great deal of college age drinking occurs in bars and other establishments which sell alcoholic beverages, and since the beer, wine, and spirits industries have geared promotional advertising toward the youth market, it behooves all students to develop a sense of what is the role of the vendor or distributor in encouraging or discouraging alcohol abuse. Students should be provided opportunities and guidelines for critically evaluating bars in terms of responsible or irresponsible vending. Students who have participated in such exercises have later said that they seldom enter a bar without thinking about responsibility and about their own drinking behavior.
- c. A carry-over of the above concept is the individual's role in encouraging or discouraging alcohol abuse by others. Students should be provided with opportunities and guidelines for planning and hosting a party or other social event in which alcoholic beverages will be handled responsibly.

- d. Closely tied in with the above concept is the individual's role in making responsible decisions about his or her own drinking behavior. Students should be provided with opportunities and guidelines for taking necessary measures to ensure they will drink responsibly if and when they choose to drink. Controlled drinking activities with breath analyzers and BAC charts are excellent devices for learning personal drinking limits.
 - e. Since most students, whether they drink or not, will from time to time encounter problems related to alcohol abuse, instruction should be provided for dealing with alcohol abuse problems. The way in which a person handles various drinking related incidents may influence his or her ability to handle similar future problems. Students should be given the opportunity to discuss and to role play ways of handling various alcohol related problems.
 - f. A final concept involves an examination of the problems of alcoholism and recovery. Alcoholism may be very distant from most students but an understanding of the process of developing alcoholism will help students keep in touch with the risk factor in their own drinking. Site visits to alcoholism treatment centers or guest appearances by recovering alcoholics are excellent ways of helping the student relate to alcoholism.
5. When feasible, administrators should consider incorporating experiential activities into educational programs. In many cases it will not be feasible to provide experiential activities but when it is

feasible experiential learning can add a new dimension to the learning process. Learning becomes more exciting, stimulating, and personally meaningful when the student is actively involved. Special emphasis should be placed on providing students with opportunities to practice desirable behaviors and be rewarded for these behaviors by social approval and the absence of negative consequences.

6. Student involvement is essential for the success of a program aimed at reaching students. Efforts should be made to identify and involve students who are interested in the prevention of alcohol abuse. Whenever possible, these students should be involved in the planning and implementation of alcohol education activities. With minimal training and supervision students can become very effective peer educators.
7. A strong institutional commitment should be made to the establishment and maintenance of campus drinking norms which equate responsible behavior toward alcohol with maturity, wisdom, popularity, and social chic. Such an environment would promote responsibility rather than irresponsibility through social reinforcement, peer influence, and campus tradition.
8. Evaluation of effect should be a principal component of any alcohol abuse prevention program. Many times what "ought" to be effective or what appears to be effective may not be effective at all; or vice-versa. Evaluation should be attempted on both an immediate and a follow-up basis. Without follow-up

evaluation observed effects which are immediate but short-lived would paint a false picture of effectiveness. Likewise, a delayed effect, which may often be the case in behavior change, may go unnoticed leading to the abandonment of a worthwhile program.

Recommendations for Future Research

1. There has been a conspicuous lack of evidence in the literature that alcohol education efforts are effective in preventing alcohol abuse. This dearth of evaluative support has caused many national leaders in the field to consider a shift in prevention emphasis to limited distribution of alcoholic beverages, tighter governmental control, or other tactics. The present study provides a model of an educational effort which has been shown to be effective. Replication of this study on other campuses should be attempted. Similar findings on other campuses would build a strong case for the effectiveness of the program.
2. For the reasons stated above, evaluative research should be conducted on the effectiveness of a variety of alcohol educational efforts. Activities such as responsible drinking parties, extended workshop sessions, role playing or psychodrama sessions, bar surveys, encounters with alcoholic individuals, or any combination of the above, may be examined separately or collectively as part of a program designed for a specific audience.

3. The academic course has been shown to be an effective approach to prevention. Variations of the course in length, content, and format as well as other courses should be developed and evaluated. It is not evident from the present study whether the intervals between treatments, the greater total treatment exposure time, or a combination of the two, provides the advantage over the short term approach. Future studies should investigate this question.
4. The experiential approach described in the present study shows promise as an innovative and effective means of educating students about alcohol. Other applications of experiential learning such as drinking-driving simulations or field experiences working with alcoholics, or combinations of cognitive and experiential approaches should be examined.
5. The present study provided follow-up data three months after completion of the treatment. Three months may not be a sufficiently long enough time period from which to claim lasting effects of treatment. A six month or one year follow-up study, though logistically difficult because of student mobility, would provide stronger evidence of lasting treatment effects.
6. The changes in negative consequences of drinking reported in the present study were based on self-reports which were subject to memory estimations and subjects' tendencies to provide socially or personally desirable responses. Other behavioral indicators such as reports from significant others, direct observation, or precise record keeping should be examined.

In summary, the present study has shown that an alcohol education program can produce desired changes in drinking behavior as well as in attitudes and knowledge. Such a program is apparently an effective approach to alcohol abuse prevention. This program is innovative and the results produced are most encouraging. Corroboration by other researchers could result in the integration of experiential, curricular methods into alcohol abuse prevention efforts on campuses across the nation.

REFERENCE NOTES

1. Rozelle, G. & Gonzalez, G. Peer Group Facilitator Manual.
Available from: Office for Student Services, University of
Florida, 1977.
2. Engs, R. C. Booze and You's 16 mm film. Available from: Indiana
University, 1976.
3. Gonzalez, G. M. The Effects of A Model Alcohol Education Module
on College Students Attitudes, Knowledge, and Behavior Related
to Alcohol Use. Doctoral Dissertation, University of Florida, 1978.

REFERENCES

- American Business Men's Research Foundation. Report on alcohol (Vol. 23, No. 1). Lansing, Michigan: Author, 1975.
- Armor, D. J. Polich, J. M., and Stambul, H. B. Alcoholism and treatment. Santa Monica: Rand Corporation, 1976.
- Atkins, A. J., and Gwyn, J. M., Teaching alcohol education in the schools. New York: Macmillan, 1959.
- Aubrey, R. F. Drug education: Can teachers really do the job? Teachers College Record, 1971, 72 (3), 417-422.
- Boe, S. Philosophy and objectives for a drug education program. The Journal of School Health, 1971, 41, 11-16.
- Brought, G. N., Follingstad, D., Brakarsh, D., and Berry, K. L. Drug education: A review of goals, approaches, and a paradigm for evaluation. Quarterly Journal of Studies on Alcohol, 1973, 34, 1279-1292.
- Brotman, R. A functional approach. International Journal of Psychiatry, 1970-71, 9, 349-354.
- Cahalan, D. and Cisin, I. H. American drinking practices: Summary of findings from a national probability sample. I. Extent of drinking by population subgroups. Quarterly Journal of Studies on Alcohol, 1968, 29 (1), 130-151.
- Cahalan, D., and Room, R. Problem drinking among American men. Monograph No. 7. New Brunswick, N. J.: Rutgers Center of Alcohol Studies, 1974.
- Campbell, D. T., and Stanley, J. C. Experimental and quasi-experimental designs for research. Chicago: Rand McNally, 1963.
- Capone, T., McLaughlin, J. H., & Smith, F. Peer group leadership program in drug abuse prevention, 1970-71 academic year. Journal of Drug Education, 1973, 3, 201-246.
- Chafetz, M. E. The prevention of alcoholism. International Journal of Psychiatry, 1970-71, 9, 329-348.

- Committee on Labor and Public Welfare: United States Senate.
Media images of alcohol: The effects of advertising and other media on alcohol abuse, 1976. Washington, D.C.: U.S. Government Printing Office, 1976.
- Davis, R. E. The primary prevention of alcohol problems. Alcohol Health and Research World (Experimental Issue), Spring, 1976, pp. 10-12.
- DeHaes, N., and Schuurman, J. Results of an evaluation study of three drug education efforts. International Journal of Health Education, 1975, 18, (Supplement) 1-16.
- Dolan, J. S. Observations about the responsible drinking theme and threshold. Journal of Alcohol and Drug Education, 1972, 2 (2), 20-29.
- Doll, W. E. A methodology of experience: An alternative to behavioral objectives. Educational Theory, 1972, 22, 309-324.
- Donovan, B. E. Studies of the drinking behavior of American white male college students: Implications of the research for the establishment of a college alcohol education program. Journal of Alcohol and Drug Education, 1977, 22 (3), 5-16.
- Edwards, G. A doubtful prognosis. International Journal of Psychiatry, 1970-71, 9, 354-358.
- Engs, R. C. College students' knowledge of alcohol and drinking in relationship to some demographic variables, In Press, 1977.
- Engs, R. C. Drinking patterns and drinking problems of college students. Journal of Studies on Alcohol, 1977a, 38 (11), 2144-2156.
- Engs, R. C. Let's look before we leap: The cognitive and behavioral evaluation of a university alcohol education program. Journal of Alcohol and Drug Education, 1977b, 22 (2), 39-48.
- Fagerberg, S. A comparative study of drug use patterns in three academic settings, university, community college, and high schools. Journal of Alcohol and Drug Education, 1975, 20 (2), 27-34.
- Festinger, L. A theory of cognitive dissonance. Evanston, Illinois: Row, Peterson and Company, 1957.
- Fillmore, K. M. Drinking and problem drinking in early adulthood and middle age: An exploratory 20-year follow up study. Quarterly Journal of Studies on Alcohol, 1975, 35, 819-840.

- Finn, P. The role of attitudes in public school education. Journal of Alcohol and Drug Education, 1974, 20 (3), 23-30.
- Freeman, H. E., and Scott, J. F. A critical review of alcohol education for adolescents. Community Mental Health Journal, 1966, 2 (3), 222-230.
- Glassco, K. Drinking habits of seniors in a southern university. Journal of Alcohol and Drug Education, 1975, 2 (1), 26-29.
- Globetti, G. Approaches to the control of alcoholic beverages in the United States. Journal of Alcohol and Drug Education, 1973, 3, 260-266.
- Gonzalez, G. M. What do you mean--prevention? Journal of Alcohol and Drug Education, In Press, 1978.
- Goodstadt, M. S. Impact and roles of drug information in drug education. Journal of Drug Education, 1975, 5 (3), 223-233.
- Hames, L. N. Can students be taught to mix alcohol and gasoline--safely? The Journal of School Health, 1971, 41 (9), 481-487.
- Hanson, D. J. Drinking attitudes and behavior among college students. Journal of Alcohol and Drug Education, 1974, 19, 6-14.
- Hanson, D. J. Trends in drinking attitudes and behavior among college students. Journal of Alcohol and Drug Education, 1977, 22 (3), 17-22.
- Hill, F. E., Bugen, L. A study of drinking behavior among college students. Unpublished manuscript, University of Texas, 1976.
- Hovland, C. I., Janis, I. L., and Kelley, H. H. Communication and persuasion. New Haven: Yale University Press, 1953.
- Jellinek, E. M. Phases of alcohol addiction. Quarterly Journal of Studies on Alcohol, 1952, 13 (4), 673-684.
- Jessor, R., Carman, R. S., and Grossman, P. H. Expectations of need satisfaction and drinking patterns of college students. Quarterly Journal of Studies on Alcohol, 1968, 29, 101-116.
- Jessor, R., and Jessor, S. I. Adolescent development and the onset of drinking: A longitudinal study. Publication No. 155, Institute of Behavioral Science, University of Colorado, 1975.
- Jones, B. M., and Parsons, O. A. Alcohol and consciousness: Getting high, coming down. Psychology Today, 1975, 8 (8), 53-58.

- Keeton, M. The case for experiential learning. Current Issues in Higher Education, 1976, 31, 188-189.
- Kimmel, C. K. A prevention program with punch: The National PTA's alcohol education project. The Journal of School Health, 1976, 46 (4), 208-210.
- Knupfer, G. Use of alcoholic beverages by society and its cultural implications. California's Health, 1960, 18 (3), 2-6.
- Knupfer, G. Characteristics of abstainers: A comparison of drinkers and nondrinkers in a large California city. (California Drinking Practices Study Rept. No. 3, revised.) Berkeley: California State Department of Public Health, Division of Alcoholic Rehabilitation, 1961.
- Kraft, D. P. College students and alcohol: The 50 + 12 project. Alcohol Health and Research World, (Experimental issue), Summer, 1976, pp. 10-14.
- Krippner, S. Why worry if the whole game is up? Perspectives on drug education. Journal of Drug Issues, 1973, 3 (4) 293-301.
- Lawler, J. T. Peer group approach to drug education. Journal of Drug Education, 1971, 1 (1), 63-76.
- LeMay, M. College disciplinary referrals for drinking. Quarterly Journal of Studies on Alcohol, 1968, 29 (4), 939-942.
- Lolli, G. Social drinking. Cleveland: World Publishing Company, 1960.
- Lolli, G. Assets outweigh liabilities. International Journal of Psychiatry, 1970-71, 9, 358-368.
- Maloney, S. K. Guide to alcohol programs for youth, Rockville, Maryland: National Institute on Alcohol Abuse and Alcoholism, 1976.
- Maxwell, M. A. Drinking behavior in the State of Washington. Quarterly Journal of Studies on Alcohol, 1952, 13, 219-239.
- McCarthy, R. G. Alcohol and social responsibility: A new educational approach. New York: Thomas Y. Crowell, 1949.
- McCarthy, R. G. Alcohol education for classroom and community: A source book for educators. New York: McGraw-Hill, 1964.
- Mendelson, J. Some comments on college drinking and consequently, alcohol education. Journal of Alcohol Education, 1969, 14 (2), 16.

- Mendelson, J. H. Another doubtful prognosis. International Journal of Psychiatry, 1970-71, 9, 368-371.
- Miles, S. A. Learning about alcohol: A resource book for teachers. Washington, D.C.: American Association for Health, Physical Education, and Recreation, 1974.
- Milgram, G. G. Alcohol education perceived by educators and students. Journal of Alcohol Education, 1974, 20 (1), 4-12.
- Milgram, G. G. A descriptive analysis of alcohol education materials. Journal of Studies on Alcohol, 1975, 36 (3), 416-421.
- Milgram, G. G. A historical review of alcohol education research and comments. Journal of Alcohol and Drug Education, 1976, 2 (2), 1-16.
- Mulford, H. A. Drinking and deviant drinking, U.S.A., 1963. Quarterly Journal of Studies on Alcohol, 1964, 25, 634-650.
- Mulford, H. A., and Miller, D. E. Drinking in Iowa. I. Sociocultural distribution of drinkers. With a methodological model for sampling evaluation and interpretation of findings. Quarterly Journal of Studies on Alcohol, 1959, 20, 704-726.
- Mulford, H. A., and Miller, D. E. Drinking in Iowa: II. The extent of drinking and selected sociocultural categories. Quarterly Journal of Studies on Alcohol, 1960a, 21, 26-29.
- Mulford, H. A., and Miller, D. E. Drinking in Iowa: III. A scale of definitions of alcohol related to drinking behavior. Quarterly Journal of Studies on Alcohol, 1960b, 21, 267-278.
- Mulford, H. A., and Miller, D. E. Drinking in Iowa: IV. Preoccupation with alcohol and definitions of alcohol, heavy drinking and trouble due to drinking. Quarterly Journal of Studies on Alcohol, 1960c, 21, 279-291.
- Mullin, L. S. Alcohol education: The school's responsibility. The Journal of School Health, 1968, 38, 518-522.
- National Institute on Alcohol Abuse and Alcoholism. First special report to the U. S. Congress on alcohol and health (DHEW Publication No. (ADM) 76-359). Washington, D.C.: U.S. Government Printing Office, 1971.
- National Institute on Alcohol Abuse and Alcoholism. Alcohol & alcoholism: Problems, programs & progress (DHEW Publication No. (HSM) 72-9127). U.S. Government Printing Office, 1972 (revised).

- National Institute on Alcohol Abuse and Alcoholism. Second special report to the U.S. Congress on alcohol and health (DHEW Publication No. HSM 72-9099). Washington, D.C.: U.S. Government Printing Office, 1974.
- National Institute on Alcohol Abuse and Alcoholism. The whole college catalog about drinking (DHEW Publication No. (ADM) 76-361). Washington, D.C.: U.S. Government Printing Office, 1976.
- National Institute on Alcohol Abuse and Alcoholism. Planning a prevention program. Rockville, Maryland: Author, 1977.
- Panken, D. H., Gonzalez, G., and Martin, S. Alcohol use among students at the University of Florida. Unpublished manuscript, University of Florida, 1976.
- Parcel, G. S. Skills approach to health education: A framework for integrating cognitive and affective learning. The Journal of School Health, 1976, 46 (7), 403-406.
- Pasciutti, J. J. Alcohol education and alcoholism education. Journal of Alcohol Education, 1967, 13 (2), 2-9.
- Penn, J. R. College student life-styles and frequency of alcohol usage. American College Health Association, 1974, 22, 220-222.
- Piaut, T. F. A. Alcohol problems: A report to the nation. New York: Oxford University Press, 1967.
- Plutchik, R. Foundations of experimental research. New York: Harper & Row, 1968.
- Randall, D., and Wong, M. R. Drug education to date: A review. Journal of Drug Education, 1976, 6 (1), 1-20.
- Research Triangle Institute. A national study of adolescent drinking behavior, attitudes and correlates. Springfield, Virginia: National Technical Information Service, 1975.
- Richmond, L. B. Decisions and Drinking: A prevention approach. Alcohol Health and Research World, 1977-78, 2 (2), 22-26.
- Riley, J. W., Jr., and Marden, C. F. The social pattern of alcoholic drinking. Quarterly Journal of Studies on Alcohol, 1947, 8, 265-273.
- Robinson, P. E. Beyond drug education. Journal of Drug Education, 1975, 5, (3), 183-191.

- Robinson, R. R. The prospects of adequate education about alcohol and alcoholism. Journal of Alcohol Education, 1969, 14 (2), 1-4.
- Rogers, C. R. Freedom to learn. Columbus, Ohio: Merrill, 1969.
- Room, R. Governing images and the prevention of Alcoholism. Preventive Medicine, 1974a, 3, 11-23.
- Room, R. Minimizing alcohol problems. Alcohol Health and Research World (Experimental issue), Fall, 1974b, pp. 12-17.
- Rozelle, G., and Gonzalez, G. A peer-facilitated course on alcohol abuse: An innovative approach to prevention on the college campus. In press, 1978.
- Russell, R. D. What do you mean--alcohol education? The Journal of School Health, 1965, 35, 351-355.
- Russell, R. D. Alcohol education vs. alcoholism education. Journal of Alcohol Education, 1967, 13 (1), 46-47.
- Russell, R. D. Education about alcohol . . . for REAL American youth. Journal of Alcohol Education, 1969, 14 (3), 16-20.
- Sanders, L. B. Mental Health, alcohol education, and problem drinking prevention. Paper presented to the National Conference of Mental Health Pharmacists, 1975.
- Sands, E. S. Alcohol education. Journal of Alcohol Education, 1969, 14 (2), 9-15.
- Sanford, N. Where colleges fail. San Francisco: Jossey-Bass, 1967.
- Sanford, N., and Singer, S. Drinking and personality. In J. Katz and Associates, No time for youth. San Francisco: Jossey-Bass, 1968.
- Scott, W. A. Attitude Measurement. In Lindsey, G. (Ed.), Handbook of Social Psychology. Redding: Addison-Wesley, 1968.
- Smart, R. G., Bennet, C., and Fejer, D. A controlled study of the peer group approach to drug education. Journal of Drug Education, 1976, 6 (4), 305-311.
- Smart, R. G., and Fejer, D. Credibility of sources of drug information for high school students. Journal of Drug Issues, 1972, 2 (2), 8-18.
- Sorenson, J. L., and Joffe, S. J. An outreach program in drug education: Teaching a rational approach to drug use. Journal of Drug Education, 1975, 5 (2), 87-96.

- Steinaker, N., and Bell, M. R. A proposed taxonomy of educational objectives: The experiential domain. Educational Technology, 1975, 15, 14-16.
- Storm, T., and Cutler, R. E. The role of research in alcohol and drug education. Journal of Alcohol and Drug Education, 1975, 20 (2), 5-11.
- Straus, R. Alcohol and society. Psychiatric Annals, 1973, 3 (10).
- Straus, R., and Bacon, S. D. Drinking in college. New Haven: Yale University Press, 1953.
- Swisher, J. D., and Crawford, J. L., Jr. An evaluation of a short-term drug education program. School Counselor, 1971, 18 (4), 265-272.
- Swisher, J. D., and Horan, J. J. Effecting drug attitude changes in college students via induced cognitive dissonance. Journal of Student Personnel and Teacher Education, 1972, 26-31.
- Todd, F. Teaching about alcohol. New York: McGraw-Hill, 1964.
- Torbert, W. R. Learning from experience: Toward consciousness. New York: Columbia University Press, 1972.
- Unterberger, H., and DiCicco, L. Alcohol education re-evaluated. Bulletin of the National Association of Secondary School Principals, 1968a, 52, 15-29.
- Unterberger, H., and DiCicco, L. Alcohol education through small group discussion. Journal of Alcohol Education, 1968b, 14 (1), 1-12.
- U. S. Department of Transportation. Young people and alcohol. Washington, D.C.: Author, 1975.
- Warner, R. W., Swisher, J. D., and Horan, J. J. Drug abuse prevention: A behavioral approach. NASSP Bulletin, 1973.
- Weir, W. R. Alcohol and alcoholism education: Attitude development and change. Journal of Alcohol Education, 1969, 15 (1), 1-8.
- Williams, A. F., DiCicco, L. M., and Unterberger, H. Philosophy and evaluation of an alcohol education program. Quarterly Journal of Studies on Alcohol, 1968, 29, 685-702.
- Wittmer, J., and Myrick, R. D. Facilitative teaching: Theory and practice. Pacific Palisades, California: Goodyear Publishing Co., 1974.
- Wong, M. R. Different strokes: Models of drug abuse prevention education. Contemporary Educational Psychology, 1976, 1, 285-303.

APPENDIX A

ASC 210 COURSE SYLLABUS RESPONSIBLE ALTERNATIVES TO ALCOHOL ABUSE Spring Quarter 1978

Purpose of class:

1. To examine current knowledge on alcohol use and abuse.
2. To consider the role of the student in fostering responsible attitudes concerning alcohol use.
3. To explore what constitutes responsible alternatives to alcohol abuse

Class requirements:

The subject matter and issues in the lectures lend themselves effectively to discussion. It is the intention of the discussion section leaders to provide an environment conducive to a free and open exchange of ideas and issues. Class participants will be expected to make contributions not only on their judgement and experience, but also on the basis of their readings.

Each student is expected to:

1. Attend all lectures and discussion sections
2. Read assigned readings
3. Prepare a written or oral presentation based on individual or group projects (which will be presented in the discussion sections during the last three weeks of the quarter). Approval of each student's project will be given by the discussion section leaders
4. Take a final examination which will cover the readings and lectures

Grades: (Letter grade or S/U option)

Grades will be based on the following scale:

20 points - attendance
40 points - project
40 points - final examination

100 - 90 : A
89 - 80 : B
79 - 70 : C
69 - 60 : D
below 60 : E

Required readings: Maxwell, R. The Booze Battle
Fort, J. Alcohol: Our Biggest Drug Problem
Block, M. Alcohol and Alcoholism

Schedule of Lectures

- Week 1 Film: Chalk Talk - features Father Joe Martin in classic lecture on alcohol, its physical and psychological effects, alcoholism and recovery.
- Week 2 Lecture: Prevention - describes primary, secondary, and tertiary prevention strategies from personal, environmental, specific, and nonspecific perspectives.
- Week 3 Lecture: Beverage Alcohol and the Liquor Industry - provides a description of alcoholic beverages, how they are made, alcohol content, and marketing.
- Week 4 Lecture: The College Student and Drinking - Dean for Student Services discusses alcohol problems on campus from administrator's viewpoint.
- Week 5 Film: Medical Aspects of Alcohol - describes in detail how alcohol affects every system of the body.
- Week 6 Special Guest Lecture: Personal Perspective on Alcoholism - famous recovered alcoholic describes his life with alcohol and his road to recovery.
- Week 7 Lecture: Alcohol and the Law - panel consisting of state attorney, public defender, and city policeman discuss legal aspects of alcohol abuse.
- Week 8 Lecture and Film: Drinking and Driving - focus is on how alcohol affects driving ability even in small amounts.
- Week 9 Lecture: Community Services - director of community alcohol programs describes available services.
- Week 10 Lecture: Alternatives to Alcohol Abuse - focus on meditation yoga, relaxation training, exercise, sports, and other alternatives to drinking for personal effects.

APPENDIX B

PEER FACILITATOR TRAINING WORKSHOP

Outline for Beginning Facilitators

A.M. Session (All beginning facilitators - required attendance)

- 9:00 Welcome and Introduction
- 9:15 Warm-up exercises
 - a. dyads - get acquainted and introduce partner to group (10 min.)
 - b. name memorization exercise (5 min.)
- 9:30 What it means to be a facilitator
group discussion (45 min.)
- 10:15 Break
- 10:30 Basic communication skills
 - a. listening exercises (30 min.)
 - b. facilitative responding (30 min.)
- 11:30 Group Dynamics and leadership
 - a. leaderless group role play and feedback (20 min.)
 - b. co-leader group role play and feedback (20 min.)
 - c. group discussion (20 min.)
- 12:30 Lunch

P.M. Session (Facilitators implementing experiential approach)

- 1:00 Rationale for experiential approach
- 1:30 Basic concepts to be covered in the small groups
- 2:00 Implementation strategies
- 2:30 Course planning

Plenary Session (All facilitators reconvene in room 122)

- 3:00 Course logistics
- 3:30 Awarding of certificates of completion

Peer Facilitator Training Workshop

Outline for Returning Facilitators

A.M. Session (All returning facilitators - required attendance)

- 9:00 Welcome and introduction
- 9:15 Approach to the prevention of alcohol abuse
didactic presentation (60 min.)
- 10:15 Break
- 10:30 Goals and philosophies of alcohol education
group discussion (60 min.)
- 11:30 Workshop approaches to alcohol education - The alcohol
education module
 - didactic presentation (30 minutes)
 - group participation - values clarification exercises
(30 minutes)
- 12:30 Lunch

P.M. Session (Facilitators implementing cognitive approach)

- 1:00 Rationale for cognitive-discussion approach
- 1:30 Basic concepts to be covered in small groups
- 2:00 Implementation strategies
- 2:30 Course planning

Plenary Session (All facilitators reconvene in room 122)

- 3:00 Course logistics
- 3:30 Awarding of certificates of completion

APPENDIX C

INFORMED CONSENT FORM

This discussion section of ASC 210 will be conducted via an experimental teaching method in alcohol education. Students will be asked to visit establishments where alcoholic beverages are sold, visit an alcoholism treatment program, attend a demonstration cocktail party, and participate in role playing exercises. Any student who experiences discomfort in participating in any of the above activities or who cannot participate for religious or other reasons will be given an optional learning experience. Consuming alcoholic beverages may be involved in some activities but no one will be required to drink. The potential benefits of this experience will be increased awareness and ability to make responsible decisions about drinking.

Inquiries about the above procedure may be addressed to your group facilitator. If you agree to participate in this experimental procedure you will be free to withdraw consent and discontinue participation at any time without prejudice. Academic evaluations will be assigned in accordance with the requirements of ASC 210 irregardless of your participation in the experiment.

I have read and I understand the procedure described above. I agree to participate in the procedure and I have received a copy of this description.

Signed:

Student

Witness

Principal Investigator's name and address

APPENDIX D
COURSE OUTLINE FOR ACTIVITY GROUPS

Week	Concept	Implementation
1	---	Pretest, Organization and Structuring
2	Alcohol Responsibility	Role Play-Social Drinking, Activity Planning
3	Responsibility in Vending	Site Visits to Drinking Establishments
4	Responsible Hosting/ Drinking	Activity Feedback, Activity Planning
5	Responsible Hosting/ Drinking	Demonstration Responsible Drinking Party
6	Dealing with Alcohol Problems	Role Play-Problem Situations, Activity Planning
7	Alcoholism and Treatment	Site Visit to Primary Care Center
8	---	Project Presentations
9	---	Project Presentations
10	---	Wrap up, Posttests, Project Presentations

APPENDIX E

ROLE PLAY VIGNETTES: RESPONSIBLE BEHAVIOR TOWARD ALCOHOL

Sally and Joanne would like to have a party at their apartment. They asked their boyfriends, Tom and Bill, to help make plans. Bill and Sally think a good party is when everyone gets drunk and rowdy. Joanne and Tom, though, think everyone should be able to have fun without getting drunk, or even without drinking.

Joe has a tendency to drink too much once he gets started. He is at a party and is trying to drink moderately because he has an important interview tomorrow. He is proudly explaining to his girlfriend what measures he has already taken to avoid getting drunk when his roommate tries to get him to join a chugging contest. He hesitates because he always does well in these contests and likes the social praise he receives.

John and his friends are planning to go out to a few bars and have a good time drinking. They don't want to worry about driving after drinking so they get together and try to come up with some ideas about how they can get home safely and still have fun.

Two three-person debate teams are addressing the issue of alcohol education. Side A advances the argument that alcohol education should focus on presenting only the facts about alcohol. Side B argues that education should focus on how to drink responsibly.

APPENDIX F

SITE VISITS TO LOCAL DRINKING ESTABLISHMENTS*

Assuming your group members are all over the legal age limit, organized visits to bars can be a valuable learning experience for all. It is extremely important to give the group some specific things to look for so that they will be able to tune in on aspects of tavern patronage usually overlooked.

Planning. Divide the group into subgroups of 3-5 persons. This makes a convenient size group for transportation and seating arrangements as well as making it possible to cover several establishments at once. Assign a peer-facilitator to accompany each group on each visit. Plan the visits according to what aspect of drinking you want to examine. For example, one group may visit on-campus drinking establishments, another may visit off-campus night clubs catering to students, and a third may visit taverns catering to businessmen.

What to Look For:

A. Setting

1. Vending--responsible or irresponsible
 - a. Does the vendor run guzzling specials or happy hours encouraging rapid excessive drinking?
 - b. Do waitresses and/or bartenders push drink refills?
 - c. Are mixed drinks strong or weak?
 - d. What non-alcoholic beverages, if any, are available?
 - e. Are non-alcoholic drinks discouraged by the vendor's negative response when a soft drink is ordered: by exorbitantly priced soft drinks, or by minimum drink rules?
2. Availability of Food
 - a. Are snacks or munchies provided and/or made available for purchase?
 - b. Are more filling foods such as sandwiches and pizza available?
 - c. Does the establishment serve meals?

*From: Rozelle, G. & Gonzalez, G. Peer Group Facilitator Training Manual, University of Florida, 1977.

3. What non-drinking activities are available?
 - a. games-pinball, foosball, TV games, etc.
 - b. T.V., films, etc.
 - c. music, dancing, live entertainment
 - d. others
4. Atmosphere - conducive to responsible or to irresponsible drinking?
 - a. Quiet conversation or noisy party atmosphere?
 - b. Is it a place to stop for a drink or two or is it a place to spend an entire evening?
 - c. Can a person have a good time there without drinking?
5. Location/transportation considerations
 - a. Is it within walking home distance of campus?
 - b. Are other forms of transportation accessible - taxi, bus, other?
 - c. Is there an easily visible and accessible phone within the establishment or nearby?
 - d. Is there an all-night diner or other late night food and coffee source nearby?
6. Other considerations
 - a. Is there a clock within easy view of all customers so that drinking time and rate may be regulated?
 - b. Are excessive drinkers tolerated?
 - c. Are there any extremely inebriated patrons there?
How are they being handled?

B. Patronage

1. Regulars
 - a. What type of people frequent the place - students, young working, hard hat, businessmen, older set?
 - b. Are there any noticeable barfllys who seem to know everyone?
2. Visitors
 - a. Do you feel like an outsider in this place or is it easy to blend in with the crowd?
 - b. Are ID's checked to keep out minors?
3. Drinking activity
 - a. Are the customers engaged primarily in drinking or are they drinking in conjunction with other activities.
 - b. Try ordering a non-alcoholic beverage. Any trouble?
 - c. Are any people drinking alone?
 - d. Are most drinkers drinking fast or drinking slow? Are they eating anything?
 - e. Is the place doing a good business?

- C. Take note of anything else that strikes you one way or another?
Rate the establishment on a scale 1-10 (10 high) on degree of responsibility of vending?
Rate the establishment on a scale of 1-10 oh how much fun the place is.

Rating Sheet

Responsibility
Rating*

Name _____

Location _____

Times Observed _____

- _____ 1. Availability of non-alcoholic drinks:
 What _____
 Prices _____
 Attitude _____
- _____ 2. Availability of food:
 What _____
 Prices _____
 Comment _____
- _____ 3. Availability of non-drinking activities:
 What free _____
 What not free _____
 Comment _____
- _____ 4. Atmosphere: (circle one)
 (5) drinking not main focus (4) sip and talk
 (3) drink and dance (2) drink fast and get rowdy
 (1) place to get drunk primarily
 Comment _____
- _____ 5. Encouragement/Discouragement of Drunkenness
 Happy hours or other specials _____
 Waitresses/bartenders push drinks _____
 Drinks strong or weak _____
- _____ 6. Location/transportation considerations
 Distance from campus _____
 Phone, taxi, or bus accessible _____
 Late night eating place nearby _____
 Clock, TV, or other means
 of time regulation _____
- _____ 7. Drinking behavior of patrons
 Type of patron _____
 Screen for minors _____
 Predominate drinking pattern _____
 Is drunkenness tolerated? _____

- _____ 8. Popular Appeal
 Fun place to go _____
 Fun without drinking _____
 Doing good business _____
 Main appeal or reason for visiting _____
- _____ 9. Advertising:
 Media employed _____
 Central theme _____
 Target audience _____
- _____ 10. Other observations:
 Cover charge _____, drink minimum _____,
 live music _____, dancing _____,
 serves: beer, wine, spirits _____
 days/times open _____
 general comments: _____

_____ Total Responsibility Rating

Responsibility Rating Code

5 - Excellent	45-50
4 - Good	35-45
3 - Fair	25-35
2 - Poor	15-25
1 - Terrible	below 15

APPENDIX G
RESPONSIBLE DRINKING PARTY*

This activity requires a lot of planning and a small financial investment but it can be a tremendously valuable learning experience. The idea is to provide an opportunity for students to actually experience being a good host and/or a responsible drinker. This type of acquired knowledge will stay with a person.

Planning. Allow the students to plan the party with your guidance. If tax deductible donations can be solicited from liquor retailers, expenses will be minimal. Otherwise all material needs can be met by having everyone bring something. Students are usually very eager to participate. It can be a lot of fun as well as a meaningful learning experience. Whenever possible, try to procure the use of a breath analyzer from the police or sheriff's department.

Things to consider:

- Type and amount of alcoholic beverages
- Soft drinks, juices, punch, mixers
- Food -- munchies, meats, cheeses
- Location -- sufficient room and seating, recreational equipment, easy access
- Activities -- planned non-drinking games and activities
- Transportation -- ways to get home without driving, volunteer drivers
- Calculation of BAC -- breathalyzer, BAC chart or calculator
- Time limits -- Starting and stopping serving of alcohol
- Guests -- who, how many
- Incidentals -- size of cups, ice, plates and napkins, name tags, etc.

Suggestions for a good party:

Plan for a time when students would normally be going out or having this class.

Distribute responsible drinking pamphlets and materials

Provide samples of beer, wine, and liquor for comparison

*From: Rozelle, G. & Gonzalez, G. Peer Group Facilitator Training Manual, University of Florida, 1977.

Label the alcohol content of all beverages so individuals can compute their own BAC.

Be sure to have a clearly visible clock to monitor drinking time and rate.

Have all participants, especially drivers, take breath tests before leaving.

Record party on videotape, take photos, or invite a reporter.

Have guests write something on paper or speak into a tape recorder before, during and after drinking. The results can be very enlightening.

Administer road side intoxication test to drinkers.

Serve non-alcoholic punch but tell drinkers it is spiked: see how many start to feel the effects.

Have bartenders record number and type of drinks for each guest.

APPENDIX H

ROLE PLAY VIGNETTES: DEALING WITH ALCOHOL PROBLEMS

John comes home from class to find Pete, his roommate, drunk. He has been drinking since the previous day and has missed some important classes. John tries to get him to stop but Pete gets angry and keeps drinking. What can John do?

Sally is on her first date with Sam whom she likes very much. It has been a fun evening but Sam has been drinking heavily and now is driving very recklessly. Sally is scared but doesn't want to say anything for fear that he won't ask her out again. How can she handle this?

Jim doesn't drink and doesn't want to begin. He is at a fraternity party and is being pressured to drink by the older brothers. Being a pledge, he wants to be accepted and liked. He is trying to be assertive but is struggling for words.

Mary has just finished final exams. She is confident that she made all A's and is anxious to tell her parents; but when she gets home her father is drunk. Instead of praising her for her grades he yells at her for refusing to go to the store to get him another bottle. She loves her father and wants to help him but does that mean buying him more liquor?

Jennifer is an attractive, intelligent, but very quiet girl. Lately she has been getting low grades, has not been dating, and has been staying alone most of the time. Her roommate, Judy, has found several bottles of vodka hidden in the room. She knows Jennifer has a problem and she wants to help. How does she approach Jennifer?

Gloria is always the life of the party -- after several drinks that is. Recently she has become very concerned about her drinking. She goes to her advisor who seems to be very understanding. Together they come up with some helpful suggestions.

APPENDIX I
COURSE OUTLINE FOR DISCUSSION GROUPS

Week	Concept	Implementation
1	—	Pretest, Organization, and Structuring
2	Alcohol Responsibility	Values Clarification Exercises
3	Responsibility in Vending	Group Discussion
4	Responsible Hosting	Group Discussion, Distribution of Pamphlets
5	Responsible Drinking	Discussion, Pamphlets, Film-- <u>Booze and You</u>
6	Dealing with Alcohol Problems	Group Discussion
7	Alcoholism & Treatment	Guest Speaker & Discussion
8	—	Project Presentations
9	—	Project Presentations
10	—	Wrap up, Posttests, Project Presentations

APPENDIX J

VALUES CLARIFICATION EXERCISES

In America we do not have a consensus as to what constitutes responsible drinking behavior. This, then leads to controversy and confusion regarding the definition of problem drinking and standards of responsible drinking.

Please rank the following examples from--most responsible drinking behavior (1)--to--least responsible drinking behavior (8). Then within your group, please discuss your ranking and arrive at a consensus ranking.

Sheryl and Jim enjoy each other's company a lot. They sometimes enjoy going out dancing at a bar. When they drink, although Sheryl reaches her limit before Jim, she doesn't like to refuse Jim's offer of another round.

When Jackie throws a party she goes all out. There's always good food and plenty of beer and wine, but she also serves non-alcoholic beverages for those who choose not to drink.

After a hard day's work, George usually comes home and has a few drinks in order to relax.

Amy likes to have a good time at parties and she enjoys drinking even though she doesn't go to a party just to drink but also to see friends and to have a good time. Drinking to her is one way of enhancing some of her social activities but is not the focus of these activities.

Pete doesn't drink all that often but when he does, he really ties one on.

Hitting the bars is one of John's favorite weekend pastimes, but he knows his limit and tries to stick to it. John knows how much alcohol he can handle and still drive safely.

Carl has missed four classes this quarter because he has been really hung over. His grades have started to suffer and Carl has decided to do something about his excessive drinking.

Jerry likes everybody to have a good time at his parties, but he is never insistent about refilling drinks. In fact, Jerry will express displeasure if he feels that a person has had too much to drink.

APPENDIX K
ATTITUDES ABOUT DRINKING

On the next four pages, there are various statements about drinking. For each statement, CIRCLE the one of the five possible responses (strongly agree, agree, undecided, disagree, strongly disagree) which best indicates how you feel about the statement. This is not a test, so there are not any "right" or "wrong" answers. Any answer is the right answer if it is the TRUE answer FOR YOU. We hope that you will give us your frank and honest opinions. Please read the statements carefully and do not skip any.

NOTE: To avoid confusion, the terms "drinking," "high," "tight," "drunk," "plowed," and "stoned" are described as follows:

- Drinking -- simply the act of taking in an alcoholic beverage (a glass of beer or wine, a cocktail, a highball) for other than religious purposes. The term "drinking" does not mean excessive drinking or drunkenness unless this is so stated.
- High -- a noticeable effect without going beyond socially acceptable behavior, e.g., increased gaiety, or slight fuzziness about what is going on, or drowsiness, etc.
- Tight -- some loss of inhibitions, or slurred or mixed-up speech, or some slight unsteadiness in ordinary physical activities, or slight nausea.
- Drunk, Plowed, Stoned--marked loss of control over ordinary physical activities (e.g., staggering), or confused speech, or not knowing what's going on, or nausea, or passing out.

1. It is okay to get "tight," or drunk as long as you are in your own home.
Strongly Agree Agree Undecided Disagree Strongly Disagree
2. Many persons can benefit from one or two drinks at a cocktail party.
Strongly Agree Agree Undecided Disagree Strongly Disagree
3. The use of alcohol is a custom which should be abandoned by our society.
Strongly Agree Agree Undecided Disagree Strongly Disagree
4. Teenagers who drink to excess do not deserve good reputations.
Strongly Agree Agree Undecided Disagree Strongly Disagree
5. The use of alcohol as a beverage by anyone is immoral.
Strongly Agree Agree Undecided Disagree Strongly Disagree
6. A person who gets "tight" or drunk is just asking for trouble.
Strongly Agree Agree Undecided Disagree Strongly Disagree
7. There is nothing wrong with the custom many people have of taking a drink or two to relax.
Strongly Agree Agree Undecided Disagree Strongly Disagree
8. A person who has never been "tight" or drunk is really missing a good thing.
Strongly Agree Agree Undecided Disagree Strongly Disagree
9. Alcohol in moderation has no real effect on a person's emotional health.
Strongly Agree Agree Undecided Disagree Strongly Disagree
10. Getting "tight" at a beach party is just harmless fun.
Strongly Agree Agree Undecided Disagree Strongly Disagree
11. Alcohol used in moderation can be an important contribution to social relationships.
Strongly Agree Agree Undecided Disagree Strongly Disagree

12. A drunk person is a sad sight.
Strongly Agree Agree Undecided Disagree Strongly Disagree
13. Drunkenness is excusable under many circumstances.
Strongly Agree Agree Undecided Disagree Strongly Disagree
14. Taking a cocktail before dinner is the first step toward alcoholism.
Strongly Agree Agree Undecided Disagree Strongly Disagree
15. The social drinker has less will power than the abstainer.
Strongly Agree Agree Undecided Disagree Strongly Disagree
16. It is possible for alcohol to be used responsibly by people.
Strongly Agree Agree Undecided Disagree Strongly Disagree
17. Moderate use of alcohol is not harmful to a person's physical health.
Strongly Agree Agree Undecided Disagree Strongly Disagree
18. Drunkenness is always undesirable.
Strongly Agree Agree Undecided Disagree Strongly Disagree
19. If people have fun when they get "tight," there's no reason why they shouldn't drink in this manner.
Strongly Agree Agree Undecided Disagree Strongly Disagree
20. Drunkenness lowers the dignity of human beings.
Strongly Agree Agree Undecided Disagree Strongly Disagree
21. Teenagers getting "tight" is excusable if there's nothing else for them to do and everybody is bored.
Strongly Agree Agree Undecided Disagree Strongly Disagree
22. As long as a person keeps out of trouble, it's all right for him to drink to excess.
Strongly Agree Agree Undecided Disagree Strongly Disagree

23. National prohibition, even if workable, is undesirable.
Strongly Agree Agree Undecided Disagree Strongly Disagree
24. Getting "tight" or drunk is a good way to let off steam.
Strongly Agree Agree Undecided Disagree Strongly Disagree
25. The way people act when they're "tight" or drunk should be enough to convince anyone not to drink to excess.
Strongly Agree Agree Undecided Disagree Strongly Disagree
26. It's all right to get "tight" once in a while, as long as it doesn't become a habit.
Strongly Agree Agree Undecided Disagree Strongly Disagree
27. All high school teachers should be abstainers.
Strongly Agree Agree Undecided Disagree Strongly Disagree
28. There is nothing wrong with the custom of many families of having wine with meals.
Strongly Agree Agree Undecided Disagree Strongly Disagree
29. Everybody should get drunk at least once.
Strongly Agree Agree Undecided Disagree Strongly Disagree
30. People who sell alcoholic beverages are preying on the weaknesses of others.
Strongly Agree Agree Undecided Disagree Strongly Disagree
31. Alcoholic beverages are harmful even when used in moderation.
Strongly Agree Agree Undecided Disagree Strongly Disagree
32. Total abstinence is the only way of life.
Strongly Agree Agree Undecided Disagree Strongly Disagree
33. If people didn't get drunk, the world would be a better place.
Strongly Agree Agree Undecided Disagree Strongly Disagree

34. Getting drunk for kicks is part of growing up.
Strongly Agree Agree Undecided Disagree Strongly Disagree
35. Any kind of drinking is wrong for teenagers under any circumstances.
Strongly Agree Agree Undecided Disagree Strongly Disagree
36. The social use of alcohol by millions of people gives them satisfaction to which they have a right.
Strongly Agree Agree Undecided Disagree Strongly Disagree
37. Liquor advertising should be legally prohibited.
Strongly Agree Agree Undecided Disagree Strongly Disagree
38. Individuals should be allowed to decide for themselves whether they should be abstainers or drinkers.
Strongly Agree Agree Undecided Disagree Strongly Disagree
39. Drinking of any sort is a threat to health and well-being.
Strongly Agree Agree Undecided Disagree Strongly Disagree
40. Excessive drinking can cause only misery in the long run.
Strongly Agree Agree Undecided Disagree Strongly Disagree
41. Drunkenness is a sign of immaturity.
Strongly Agree Agree Undecided Disagree Strongly Disagree
42. Drinking of alcoholic beverages should be classed with the illegal use of dope.
Strongly Agree Agree Undecided Disagree Strongly Disagree

APPENDIX L

STUDENT DRINKING QUESTIONNAIRE

GENERAL INSTRUCTIONS

We appreciate very much your assistance with our research. We need to know some of the students knowledge and behavior concerning alcohol use. The knowledge we gain depends entirely on your willingness to be thoughtful and honest in your answers. Only your frank answers can give us the kind of information we need.

In this questionnaire, there are different sets of questions dealing with different kinds of things. The questions do not have good or bad answers; this is not that kind of questionnaire. The answer to give is the one that best shows how you are likely to act, what you know and what you have experienced concerning alcohol use.

Your answers will be kept completely confidential. No names will be placed on the questionnaire and the information will be used for research purposes only. Please try to be as honest as you can in each answer. Thank you.

SECTION I

All the statements that follow refer to the use of alcohol. Please think about each one and then circle the letters corresponding to whether you are: very likely (VL) to act this way, likely (L), somewhat likely (SL), unlikely (U), or very unlikely (VU). If you do not drink alcoholic beverages, go to Section II.

How likely are you to:	VERY LIKELY	LIKELY	SOMWHAT LIKELY	UNLIKELY	VERY UNLIKELY
1. always use alcohol as an adjunct to an activity rather than as the primary focus of attention.	VL	L	SL	U	VU
2. provide food with alcohol at all times, especially proteins such as cheeses, fish and meats.	VL	L	SL	U	VU
3. rationalize drinking behavior by such comments as "I just need one more to relax" or "how about one for the road".	VL	L	SL	U	VU
4. provide non-alcoholic alternative drinks, fruit juices, unspiked punch or coffee and tea at your party.	VL	L	SL	U	VU
5. express displeasure by offering a substitute drink -- perhaps coffee -- to someone who has had too much to drink.	VL	L	SL	U	VU
6. set limits on how many drinks you are going to have a night out or at a party.	VL	L	SL	U	VU
7. gulp drinks for the stronger effect that rapid drinking produces.	VL	L	SL	U	VU
8. respect a person who chooses to abstain from drinking alcohol.	VL	L	SL	U	VU
9. provide transportation or overnight accommodations for those unable to drive safely after drinking.	VL	L	SL	U	VU
10. celebrate by drinking when things go very well for you.	VL	L	SL	U	VU
11. drink alone from a desire to escape boredom or loneliness.	VL	L	SL	U	VU
12. not be insistent about "refreshing" or refilling drinks.	VL	L	SL	U	VU
13. make sure alcohol is used carefully in connection with other drugs.	VL	L	SL	U	VU
14. tell a friend that there is nothing funny about being drunk when he is bragging about his drinking.	VL	L	SL	U	VU
15. seriously think about the problems of alcohol abuse.	VL	L	SL	U	VU
16. talk about how to use alcohol responsibly with your roommate or close friend.	VL	L	SL	U	VU
17. drink alcohol primarily to get drunk.	VL	L	SL	U	VU
18. stop drinking after having just a few drinks.	VL	L	SL	U	VU
19. know and stay within your personal drinking limit based on body weight if you are going to drive.	VL	L	SL	U	VU
20. seek help if you thought you had a drinking problem.	VL	L	SL	U	VU

SECTION II

IN THIS SECTION WE WOULD NOW LIKE TO ASK YOU SOME INFORMATION ABOUT ALCOHOL.

The questions will either be TRUE or FALSE. If you do not know the answer to the question DO NOT GUESS. Circle the letters corresponding to DON'T KNOW.

	TRUE	FALSE	DON'T KNOW
1. Drinking milk before drinking an alcoholic beverage will slow down the absorption of alcohol into the body.	T	F	DK
2. Alcoholic beverages do not provide weight increasing calories.	T	F	DK
3. In America, drinking is usually considered an important socializing custom in business, for relaxation and for improving interpersonal relationships.	T	F	DK
4. Gulp of alcoholic beverages is a commonly accepted drinking pattern in this country.	T	F	DK
5. Alcohol is usually classified as a stimulant.	T	F	DK
6. Alcohol is not a drug.	T	F	DK
7. A blood alcohol concentration of 0.1% is the legal definition of alcohol intoxication in most states in regards to driving.	T	F	DK
8. Approximately 10% of fatal highway accidents are alcohol related.	T	F	DK
9. Alcohol was used for centuries as a medicine in childbirth, sedation, and surgery.	T	F	DK
10. Table wines contain from 2-12% alcohol by volume.	T	F	DK
11. It is estimated that approximately 85% of the Adult Americans who drink, misuse or abuse alcoholic beverages.	T	F	DK
12. Most people drink to escape from problems, loneliness, and depression.	T	F	DK
13. The most commonly drunk alcoholic beverages in the United States are distilled liquors (whiskey, gin, vodka).	T	F	DK
14. A person cannot become an alcoholic by just drinking beer.	T	F	DK
15. To prevent getting a hangover one should sip his drink slowly, drink and eat at the same time, space drinks over a period of time, and don't over drink for your limit.	T	F	DK
16. Distilled liquors (gin, whiskey, vodka, etc.) usually contain about 15-20% alcohol by volume.	T	F	DK
17. Moderate consumption of alcoholic beverages is generally <u>not</u> harmful to the body.	T	F	DK
18. It takes about as many hours as the number of beers drunk to completely burn up the alcohol ingested.	T	F	DK
19. Many people drink for social acceptance, because of peer group pressures and to gain adult status.	T	F	DK
20. A blood alcohol concentration of .02 usually causes a person to be in a stupor.	T	F	DK
21. Liquors such as gin, scotch, and whiskies are usually distilled from mashes made from fermenting grains.	T	F	DK
22. Proof on a bottle of liquor represents half the percent of alcohol contained in the bottle.	T	F	DK
23. The United States lacks a national consensus on what constitutes the responsible use of alcoholic beverages.	T	F	DK
24. There is usually more alcoholism in a society which accepts drunken behavior than in a society which frowns on drunkenness.	T	F	DK
25. Beer usually contains from 2-12% alcohol by volume.	T	F	DK
26. Eating while drinking will have no effect on slowing down the absorption of alcohol in the body.	T	F	DK
27. Drinking coffee or taking a cold shower can be an effective way of sobering up.	T	F	DK
28. Drinking of alcoholic beverages has been common in the U.S.A. since the Puritans first settled here.	T	F	DK
29. Alcohol has only been used in a very few societies throughout history.	T	F	DK
30. Liquor taken straight will affect you faster than liquor mixed with water.	T	F	DK

SECTION III

The following are common results of drinking alcohol that other students have reported. If you have never had a drink at all skip this section. If you currently drink or have drunk in the past, circle the number corresponding to the frequency of the occurrences during the PAST THIRTY MONTHS.

	NEVER	1 TIME	2 TIMES	3 TIMES	4 TIMES	5 TIMES OR MORE
1. Have had a hangover.	0	1	2	3	4	More
2. Have gotten nauseated and vomited from drinking.	0	1	2	3	4	More
3. Have driven a car <u>after</u> having several drinks.	0	1	2	3	4	More
4. Have driven a car when you know you had too much to drink.	0	1	2	3	4	More
5. Have been drinking <u>while</u> driving a car.	0	1	2	3	4	More
6. Have come to class after having several drinks.	0	1	2	3	4	More
7. Have "cut a class" after having several drinks.	0	1	2	3	4	More
8. Have missed a class because of a hangover.	0	1	2	3	4	More
9. Have been arrested for DWI (Driving While Intoxicated).	0	1	2	3	4	More
10. Have been criticized by someone you were dating because of your drinking.	0	1	2	3	4	More
11. Have had trouble with the law because of drinking.	0	1	2	3	4	More
12. Have lost a job because of drinking.	0	1	2	3	4	More
13. Got a lower grade because of drinking too much.	0	1	2	3	4	More
14. Gotten into trouble with the school administration because of behavior resulting from drinking too much.	0	1	2	3	4	More
15. Gotten into a fight after drinking.	0	1	2	3	4	More
16. Thought you might have a problem with your drinking.	0	1	2	3	4	More
17. Damaged property, pulled a fire alarm, or other such behavior after drinking.	0	1	2	3	4	More
18. Did not remember what happened while you were drinking.	0	1	2	3	4	More
19. Have done something after drinking which you later regretted.	0	1	2	3	4	More
20. Were involved in some type of accident after drinking.	0	1	2	3	4	More

SECTION IV

This is the final section of the questionnaire. These are all background information about you. Please fill in the appropriate space.

Age _____ Sex _____ Year in School: Freshmen _____
 Ethnic Background: Spanish-American _____ Sophomore _____
 White _____ Junior _____
 Black _____ Senior _____
 American Indian _____ Graduate _____

Do you drink alcoholic beverages? Yes _____
 No _____

THANK YOU FOR YOUR HELP!

APPENDIX M

COVER LETTER FOR POST-POSTTEST

Dear

As a student in BES 252 during Spring quarter 1978, you participated in a research project in which you were asked to complete two questionnaires about drinking. Your cooperation in completing the instruments is greatly appreciated. However, I must ask for your assistance one more time to complete the research.

Please complete the enclosed questionnaires and return them to this office via the accompanying self-addressed stamped envelope. As before all responses will be held in strict confidence and anonymity will be maintained. No attempt will be made to identify individual questionnaires. However, we do ask that you write the last four digits of your social security number on the front upper right corner of each questionnaire. These numbers will be used for pairing questionnaires.

Please complete the questionnaires and return to this office by _____ so that the research may be completed.

The results of this study will be made available to you upon request at the end of the fall quarter.

Thank you for your cooperation.

Sincerely,

George Rozelle

GR/vt

APPENDIX N

SECOND COVER LETTER FOR POST-POSTTEST

Dear

This is a follow-up to my previous letter and a reminder to please complete the enclosed questionnaires and return to me via the enclosed self-addressed stamped envelope if you have not already done so. I cannot emphasize enough the importance of your prompt reply. The research cannot be completed without a sufficient return of the questionnaires mailed out. Five or ten minutes of your time is all that is required to make a significant contribution to our alcohol abuse prevention and education efforts.

A tremendous amount of time and expense has gone into this project. Its completion depends on your cooperation. As I stated before, your response will be confidential and will be used for research purposes only. For purposes of matching questionnaires, we request that you please write the last four digits of your social security number on the top right hand corner of each questionnaire.

Thank you very much for your assistance on this matter. If you have already mailed the completed questionnaires sent to you earlier, please disregard this letter.

Sincerely,

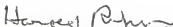
George Rozelle

BIOGRAPHICAL SKETCH

George Robert Rozelle was born on October 21, 1950, in Wauseon, Ohio. He is the son of George M. and Pearl E. Rozelle and the brother of Ann M. Vasbinder. In the summer of 1963 the family moved to Englewood, Florida, where his parents and sister presently reside. George graduated from Charlotte High School in Punta Gorda, Florida, in June, 1968. In June, 1972, he graduated from the University of Florida with high honors and honors in psychology. In December, 1973, he received a Master's degree in Rehabilitation Counseling from the same institution. For the next three years he served as the Alcoholism Program Coordinator for the North Central Florida Community Mental Health Center in Live Oak, Florida. Upon returning to the University of Florida to pursue the degree of Doctor of Philosophy in Counselor Education, he became involved with the Alcohol Abuse Prevention Program where he served as a graduate assistant until the present time.

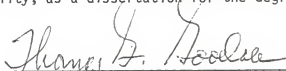
After graduation Mr. Rozelle plans to continue to work in the field of human services with an emphasis on alcohol abuse prevention and treatment. He presently resides in Gainesville, Florida, with his wife Mary and daughter Erin Joy.

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.



Harold Riker, Chairman
Professor of Counselor Education

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.



Thomas Goodale
Associate Professor of Counselor
Education

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.



Carol Van Hartesveldt
Professor of Psychology

This dissertation was submitted to the Graduate Faculty of the Department of Counselor Education in the College of Education and to the Graduate Council, and was accepted as partial fulfillment of the requirements for the degree of Doctor of Philosophy.

December 1978

Dean, Graduate School